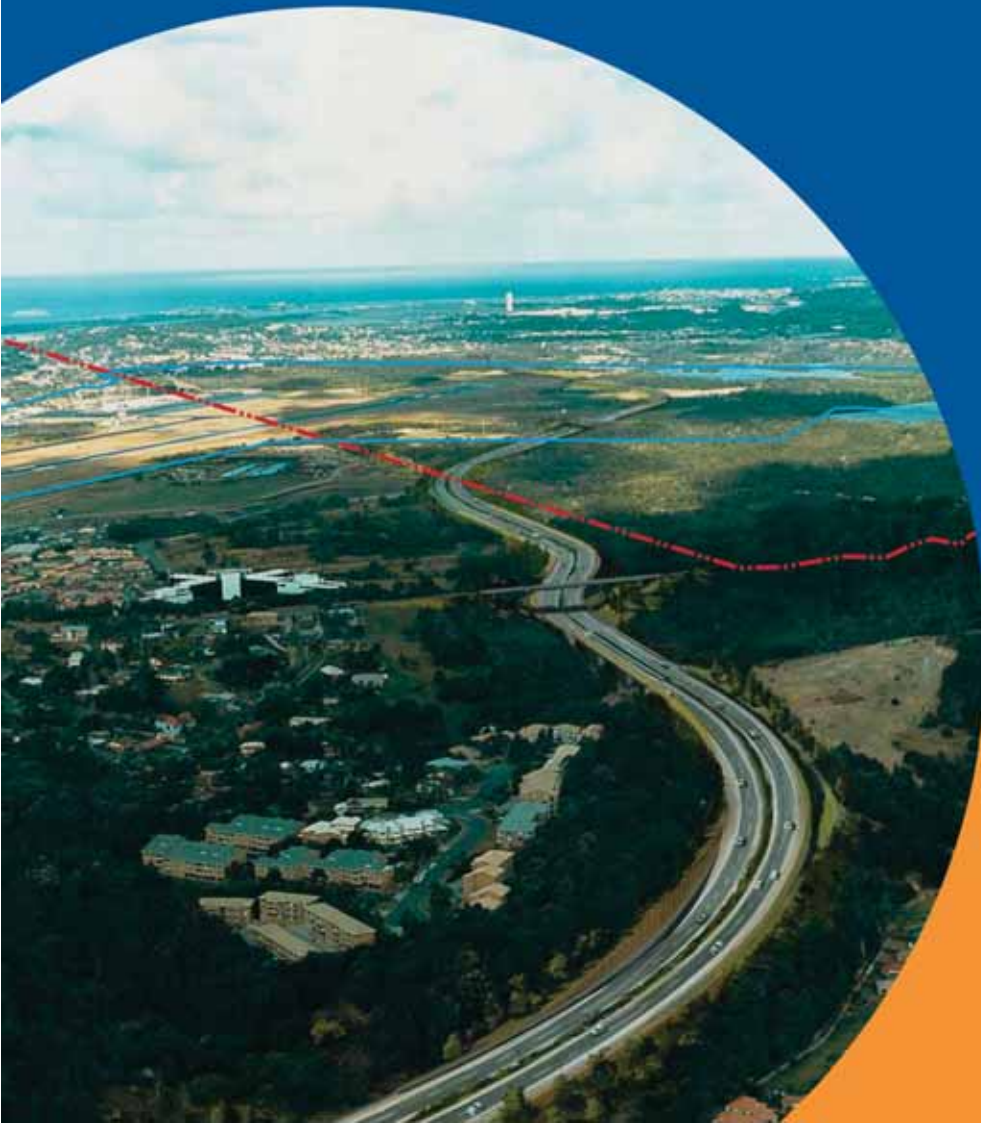


# TUGUIN

B Y P A S S

stewart road to kennedy drive



**Technical Papers**

December 2004

# Tugun Bypass Environmental Impact Statement

## Technical Paper Number 15 Land Use Planning and Socio-Economic Assessment



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### Tugun Bypass Alliance

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# 1. Introduction

## 1.1 Summary of the Technical Paper

Land use and transport planning in the study area for the proposed Tugun Bypass is guided by a number of plans and policy documents.

In Queensland, the transport objective of the *South East Queensland Regional Framework for Growth Management 2000* (SEQ 2001 Project 2000) is to improve the functioning of existing and future transport networks and facilities in terms of accessibility, cost and environmental impact. In the *Integrated Regional Transport Plan for South East Queensland* (Queensland Transport 1997) and the *Gold Coast City Transport Plan* (Gold Coast City Council 1998b), a bypass in the Tugun area and the extension of the rail line from Robina to Gold Coast Airport are recognised as strategic transport opportunities. By providing access to a safe and efficient transport system, the proposed transport corridor would comply with the aims of the *Gold Coast City Activity Centre Strategy* (Gold Coast City Council 1998a) and encourage residential and commercial growth in key designated activity centres.

State Planning Policies in Queensland and State Environmental Planning Policies in NSW are statutory planning instruments designed to address issues considered to be of state interest. The proposed transport corridor would need to consider two Queensland State Planning Policies – *Development in the Vicinity of Certain Airports and Aviation Facilities* and *Planning and Managing Development Involving Acid Sulphate Soils*. In NSW, the proposed alignment has the potential to affect an area of wetland. Under *State Environmental Planning Policy Number 14 – Coastal Wetlands*, the proposed bypass is classified as designated development and the preparation of an Environmental Impact Statement (EIS) is required to support a development application under NSW planning legislation. *State Environmental Planning Policy Number 71 – Coastal Protection* has also been triggered. Under NSW planning legislation the project will be referred to the Coastal Council of NSW.

The Integrated Planning Act 1997 compliant Our Living City - Gold Coast Planning Scheme (Gold Coast City Council 2003) commenced on 18 August 2003. The proposal is consistent with the transport strategy and land use themes set out in the planning scheme. This planning scheme also acknowledges the need for a bypass in the Tugun area and the necessity for a rail linkage from Coolangatta to Brisbane.

Land use 'Domains' (formerly identified as zones in the superseded planning schemes) are included in the Our Living City - Gold Coast Planning Scheme, and Zones are included in the Tweed Local Environmental Plan 2000 (Tweed Shire Council 2000b) to regulate development. A number of land use Domains and Zones would be traversed by the proposal. The majority of these allow for major development undertakings such as roads and rail lines. However, in NSW, the proposed rail corridor would traverse land zoned Environment Protection 7(a) under the Tweed Local Environmental Plan 2000 which prohibits use for railways. This corridor would therefore require rezoning in order to allow the proposed rail line to proceed.

Zones in the study area are defined in the *Gold Coast Planning Scheme – Our Living City* (2003), and the *Tweed Local Environmental Plan 2000* (Tweed Shire Council 2000b). A number of land use zones would be traversed by the proposal. The majority of these zones allow for major development undertakings such as roads and rail lines.

However, in NSW the proposed rail corridor would traverse land zoned Environment Protection 7(a) under the *Tweed Local Environmental Plan 2000* which prohibits use for railways. This corridor would therefore require rezoning in order to allow the proposed rail line to proceed.

Development on land occupied by Gold Coast Airport is controlled by the *Airports Act 1996*. Land use plans in the Final Master Plan (Gold Coast Airport Limited 2001) for the airport identify land in the Western Enterprise Precinct for rail and road routes.

Future changes to land use are likely to result from urban development, the growth of regional and district centres, expansion of the Gold Coast Airport, industrial development, and the proposed rail stations associated with the rail extension from Robina to Gold Coast Airport. The proposed transport corridor would largely occur outside areas of committed future land use, except for the proposed urban development at Pacific Beach Estate. Land would be acquired from this estate for the proposed Tugun Bypass and the proposed rail station. While the loss of this land would reduce the area available for development, the opportunity exists to integrate the higher intensity uses proposed as part of the Pacific Beach Estate with the rail station.

Benefits for Gold Coast Airport would arise from improving the reliability of access to the airport (by reducing delays on the Gold Coast Highway and by the provision of an alternative access route to the airport) and providing a new form of future public transport access to Gold Coast Airport via the proposed rail line.

Social impacts upon the study area would be created by changes to access and community severance, changes to the visual landscape, disturbances caused by noise, dust and vibration, road safety issues, property acquisitions and minor psychological stress.

A survey of local businesses located along the Gold Coast Highway and Golden Four Drive from Currumbin to Coolangatta was undertaken in February 2001 to canvass views from business owners regarding the proposed Tugun Bypass. Overall, this survey revealed that there is concern in the community regarding a possible loss of trade and disruption to the normal flow of trade for local businesses. Those most concerned are restaurant, hotel, service station and fast food outlet owners.

To minimise the effects of land use and social impacts during construction, the technical paper recommends a number of mitigation measures. A summary of the main mitigation measures is given below:

- preparation of a traffic management plan for the construction site and its surroundings that aims to reduce access difficulties to facilities and maintain adequate levels of road safety;
- assessment of the feasibility of constructing an internal link from Stewart Road to Boyd Street for the use of construction vehicles to reduce access difficulties to facilities, minimise noise impacts from construction vehicles and construction activities and maintain adequate levels of road safety;
- undertake landscaping and rehabilitation activities along the length of the proposed Tugun Bypass upon completion of construction activities;
- use of excavation technologies such as different piling techniques, to minimise noise and vibration levels;
- use of appropriate road surface treatments to lessen road traffic noise;

- implementation of noise mitigation measures at selected locations;
- employment of appropriate construction techniques that help to minimise the emission of exhaust fumes and the release of airborne dust; and
- implementation of an effective community consultation strategy.

During operation of the proposed Tugun Bypass, the positive benefits to be gained would be:

- reduction in daily through traffic and an increase in proportion of local traffic along the Gold Coast Highway between Currumbin and Tweed Heads;
- improvement in travel times for traffic and reduced traffic flows on the Gold Coast Highway;
- improved accessibility and response times of emergency services;
- improved reliability and efficiency of road freight movements in the southern Gold Coast region;
- increased attractiveness of coastal beaches in the study area with the diversion of heavy freight vehicles; and
- improvements in the general amenity of areas surrounding the Gold Coast Highway.

The implementation of the proposed bypass could be expected to remove a proportion of potential passing trade for local businesses along the existing route. However, most businesses in the area provide essential local services or are associated with tourism. The resulting improvement in local amenity is expected to provide opportunities for the development of local business activities.

## **1.2 Reporting of Study Findings in the EIS**

The studies for the Tugun Bypass environmental impact assessment commenced in 2000. In the subsequent four years the results of the various studies have been used to refine the concept design of the proposal. Further studies were also commissioned to ensure that all aspects of the various environmental issues were fully understood.

The long time period of the assessment has meant that the content of some of the earlier reports has been superseded by newer work. Changes to the design of the bypass have also been introduced to take account of these studies.

In the event that there is a contradiction between the technical papers and the text of the EIS, the EIS takes precedence as it reports the current understanding of issues, impacts and the concept design.





## 2. Planning Framework

### 2.1 Queensland Planning Framework

#### 2.1.1 South East Queensland Regional Framework for Growth Management

The *South East Queensland Regional Framework for Growth Management 2000*, (Regional Framework) provides the overall regional planning strategy for south-east Queensland, aimed at protecting and enhancing the environmental, social and economic assets of the region.

The Regional Framework establishes objectives for growth in south-east Queensland with respect to economic development, urban growth and transport planning.

The strategy developed in the Regional Framework envisages the development of four distinctive urban areas. In addition to the Gold Coast these are the Brisbane metropolitan area, the Sunshine Coast and Toowoomba. Future development would focus on the consolidation of development in the area between Helensvale and Coolangatta, with adjacent growth areas immediately to the south of the Queensland–NSW border in Tweed Heads.

The principal transport objective of the framework is to improve the functioning of existing and future transport networks and facilities in terms of accessibility, costs and environmental impacts.

The strategy establishes a set of principles and priority actions to improve transport in the region. Principles designed to achieve the transport objective are:

- use the public transport, freight and road systems to achieve:
  - the desired pattern of development for the region to the year 2011;
  - improved quality of life for all residents;
  - improved levels of accessibility;
  - environmental protection; and
  - economic development.
- shift the focus of transport planning from responding to demand on a local or sub-regional basis to influencing demand by supporting the growth of residential development, employment activities, and associated services and facilities at major centres; and
- protection of high capacity transport corridors for inter-urban travel.

Priority actions of relevance to the proposed transport corridor include:

- undertake major planning and network studies to develop integrated transport and land use responses;
- provide a continuous and integrated system of designated high capacity freight roads and rail services which maximise the separation of heavy freight traffic from urban areas and that give priority to freight movements;
- plan for and encourage the establishment of public transport services and facilities as a first stage of major new urban developments;

- implement measures to sustain the road hierarchy by developing local arterial road networks to preserve the capacity of existing highways to carry inter-city and inter-regional traffic;
- improve safety for local traffic by keeping non-local traffic out of local streets; and
- protect the significance of regional airports, such as Gold Coast Airport by establishing the need for new road links and rapid public transport systems and opportunities for associated uses.

Specific priority actions required to achieve the objectives include the investigation of:

- a public transport corridor from Robina to the NSW border;
- interchanges at key centres;
- options for alternative systems of public transport, such as busways and light rail from Southport to Robina to Coolangatta and Tweed Shire;
- expansion of bus services to key centres and other employment areas, such as major industrial zones and activities; and
- cross-regional transport links.

Concept planning of the proposed transport corridor has taken account of the priority actions listed above. The proposal proactively plans for future public transport needs to serve planned developments in the region. This would encourage economic and employment activities to locate in the area and facilitate the growth of identified centres that are well served by public transport. Further, the proposed bypass would help to support the principles of separating local and through traffic, creating a safer road environment and improving freight movements and the general amenity of these road systems. The proposed transport corridor would also be beneficial to the future growth in operations at Gold Coast Airport.

### **2.1.2 Integrated Regional Transport Plan for South East Queensland**

The *Integrated Regional Transport Plan for South East Queensland*, released by Queensland Transport in 1997, provides a 25 year plan to develop and manage the transportation system in south-east Queensland. It is the mechanism for implementing the transport planning strategies contained in the *South East Queensland Regional Framework for Growth Management 2000*.

Attaining a sustainable regional transportation network is the main aim of the *Integrated Regional Transport Plan for South East Queensland*. It seeks to realise this aim by achieving a balance between:

- moderating traffic growth and giving priority to public transport and high occupancy vehicles;
- widening and upgrading existing roads; and
- constructing new road links, especially bypasses and ring road connections.

A number of objectives have been set to help achieve this aim. Of relevance to this proposal are the following objectives:

- provide efficient and sufficient road capacity through planning to meet moderate traffic demands and accommodate growth of the region's urban areas;
- ensure the efficient movement of freight by high quality rail, road, and air links and intermodal facilities; and

- provide improved facilities for pedestrians and cyclists.

The *Integrated Regional Transport Plan for South East Queensland* sets specific goals for the improvement of transport systems in south-east Queensland. The key goal is to increase the proportion of trips by public transport by 50 percent, from 7 percent to 10.5 percent by 2011. The target public transport modal split for the Gold Coast was set at 6.5 percent by 2011.

Actions to encourage a greater focus on public transport include:

- greater intensity of development within easy walking distance of public transport nodes;
- provision of incentives to encourage greater use of public transport within these locations;
- redevelopment of existing residential and commercial areas at public transport nodes to increase the mix of users and level of use; and
- development of a land use/transport corridor process to coordinate major public transport investments with supporting urban development.

These are intended to promote mutually supportive outcomes from land use and transport planning, including achievement of the targets of reduced dependence on the private motor vehicle, increased proportion of trips on public transport, enhanced accessibility to services and job opportunities, and improvement of environmental quality.

The transport plan identified a number of strategic opportunities relating to investment in new public transport and road infrastructure, including:

- public transport priority along the Gold Coast Highway from Runaway Bay to Coolangatta;
- extension of the rail line from Robina to Coolangatta–Tweed;
- Pacific Highway upgrade; and
- the Tugun Bypass.

The proposed Tugun Bypass is identified as a strategic opportunity in the *Integrated Regional Transport Plan for South East Queensland*.

It is consistent with the objectives set out in the plan by:

- providing sufficient road capacity to cater for traffic growth in the Gold Coast – Tweed corridor, providing a more efficient route for longer distance trips in the region;
- providing a more efficient route for road freight vehicles through Tugun and for road freight vehicles accessing Gold Coast Airport; and
- reducing traffic volumes on the Gold Coast Highway and its service roads so as to improve facilities for pedestrian and cyclist movement in these areas.

The proposed rail extension from Robina to Gold Coast Airport is also consistent with these objectives in that it would provide a suitable alternative means of transport to the local area and would contribute to a more efficient transport network overall.

### 2.1.3 Transport 2007

*Transport 2007* (Queensland Transport 2001) is a companion document to the *Integrated Regional Transport Plan for South East Queensland*. *Transport 2007* provides a more detailed action plan for transport in the region for the period up to 2007, and includes specific strategies for each of the subregions.

*Transport 2007* identifies a number of plans needed to meet the transport goals for the region. The principle aims of the plans are to:

- improve coordination and integration between transport nodes to make better use of existing capacity through a reduction in car dependency and encouraging the use of public transport, shared rides, walking and cycling;
- develop flexible public transport services by improving the capacity, reliability and service frequency of the public transport system as well as providing a network of public transport interchanges;
- manage travel demands in peak periods to free up valuable road space by encouraging people to modify their travel behaviour;
- provide efficient and sufficient road capacity infrastructure to improve traffic flows, reduce bottlenecks, protect public transport and road corridors for future needs, upgrade and protect the capacity of regional highways;
- ensure efficient movement of freight and improve the reliability, access and connectivity for freight and business through the development of an integrated freight network;
- provide improved facilities for pedestrians and cyclists through the development of local and regional network plans and the provision of end-of-trip facilities; and
- coordinate land use planning with transport planning to ensure sufficient transport corridors, cycling paths and residential areas are developed around transport nodes, rather than trying to provide viable transport options for urban sprawl.

Transport system strategies defined in *Transport 2007* that apply to the study area include:

- make more efficient use of the existing system;
- protect identified public transport and road corridors for beyond 2007; and
- extend the regional rail system to key growth areas and support it with transit-orientated development.

Proposals for the Gold Coast subregion include:

- planning and preservation of the rail corridor from Robina to Coolangatta for implementation after 2007;
- planning and preservation of bus lanes from Burleigh Heads to Coolangatta along the Gold Coast Highway;
- construction of the Tugun Bypass; and
- progressive improvement of the Paradise Point to Coolangatta cycle link and provision of cycle facilities within a 5 km radius of Robina and Coolangatta.

*Transport 2007* stresses that infrastructure alone will not deliver targets set in the *Integrated Regional Transport Plan for South East Queensland*. Land use policies and transport plans that work in tandem to concentrate development near major public

transport nodes and support major centres with transport improvements would assist in achieving set targets.

Constructing the proposed Tugun Bypass to assist in separating long haul and local urban traffic and investigating the extension of the rail line from Robina to Gold Coast Airport are two medium-term objectives of *Transport 2007*. Implementation of the proposal therefore, is consistent with the strategic transport directions for south-east Queensland.

#### **2.1.4 Roads Implementation Program**

Queensland Department of Main Roads (Main Roads), *Roads Implementation Program 1999-2000 to 2003-2004* (Main Roads 1999b) sets a number of key objectives for road infrastructure investment in Queensland. Of relevance to this proposal, are the following objectives:

- focus infrastructure investment towards supporting the development of established and emerging industries;
- promote integrated transport planning;
- assist all regions to realise their development potential; and
- ensure that the provision of road infrastructure is consistent with government policies on environmental sustainability.

#### **2.1.5 South East Queensland Freight Study**

The *South East Queensland Freight Study* (Queensland Transport 1996) provides a strategic plan for freight transport consistent with the policy principles of the *Integrated Regional Transport Plan for South East Queensland*. It has five main objectives:

- to contribute to local, regional, state and national economic activity and performance;
- to minimise external effects of freight activities, especially noise, emissions, dangerous goods movement and intrusion into residential, commercial or other sensitive areas;
- to improve the efficiency and productivity of the freight sector;
- to improve the safety of freight transport including interaction with other vehicles and infrastructure; and
- to facilitate freight systems that support preferred patterns of development and distribution of economic activity, and which support an efficient relationship between land use and transport.

The study identified freight traffic at Tugun as having significant movements across the Queensland–NSW border, and general interaction with the Gold Coast, particularly Burleigh Heads, with some movement to Acacia Ridge and Wacol in Brisbane.

A priority was set in the study to continue to support projects that provide incremental freight transport benefits and satisfy other transport outcomes. One of the actions listed as able to achieve such benefits was a bypass of the Gold Coast Airport.

#### **2.1.6 Southern Gold Coast – Tweed Corridor Land Use and Transport Study**

The objective of the *Southern Gold Coast – Tweed Corridor Land Use and Transport Study* (Queensland Transport 1998a), was to prepare long-term land use and transport

proposals and implementation plans for the southern Gold Coast – Tweed corridor, which are consistent with the transport planning objectives identified in earlier strategic plans.

The main traffic and transport issues examined in the study related to the definition of road and rail transport corridors and the future of Gold Coast Airport. Road corridor issues were associated with the need to upgrade the Pacific Highway, as traffic demand was reaching current capacity. Such an improvement would need to take account of well-established land use patterns and large-scale development commitments in northern NSW, which would result in impacts in the Tugun area.

Rail planning issues related to the physical constraints imposed by local conditions. The extension of the rail service from Robina to Coolangatta would expand the catchment area for commuter travel to Brisbane, but it is not seen as providing a transit function that would benefit the region. This would have implications for the planning of the long-term land use/activity-based strategy, as a regional commuter function would not be effectively integrated with the development of the local growth centres, identified in the Regional Framework.

The key issues identified in the study included:

- the significant amount of land already committed to development could limit opportunities for integrated corridor planning and transit-supportive development;
- topography and ecological constraints limit expansion to the west;
- development is focused on a narrow coastal strip;
- urban development in Tweed Shire forms, in effect, an extension of the Gold Coast conurbation;
- Tweed Heads commercial centre has combined with Coolangatta to form a major centre;
- Gold Coast Airport is the potential location for an interchange between road, rail and air transport;
- existing rail facilities are not ideally located to serve residential and employment areas along the coastal strip without local transit support; and
- future growth in Tweed Shire is planned for the northern and coastal areas away from the railhead at Murwillumbah and the Pacific Highway corridor.

The major findings of the study included:

- future land use would continue to be dominated by a number of urban centres including Robina, Currumbin, Tugun and Coolangatta;
- consolidation and accelerated urban development of designated centres, tourist areas and urban areas is occurring along the coastal strip;
- projected annual population increases of 4 percent are anticipated, with most growth occurring outside the corridor to the north and west;
- significant shortfalls in the capacity of the existing road, rail and public transport system and its inability to cater for projected population and patronage growth have been identified in the corridor between Robina and Coolangatta; and
- projected 2011 annual average daily traffic volumes are anticipated to be 72,000 vehicles along the Gold Coast Highway, with the proposed large residential development at Cobaki Lakes expected to result in significant cross-corridor demand.

A clear division of function has been established between the Gold Coast Highway, serving as an urban arterial (and tourist route) along the coast, and the Pacific Motorway/Highway, catering for longer distance traffic as a regional arterial. The main problem in the southern Gold Coast area occurs where the two highways converge at Currumbin, sharing the same road facility to the east of Gold Coast Airport. The report recommends maintaining the urban arterial function of the Gold Coast Highway and identifying an alternative alignment for the Pacific Motorway/Highway.

### **2.1.7 Gold Coast City Transport Plan**

The *Gold Coast City Transport Plan – Transport Master Plan 1999 to 2030* (1998b) was prepared within the framework established by the *Integrated Regional Transport Plan for South East Queensland*. As a 30 year transport master plan it documents strategies and actions to address the travel demand challenges facing Gold Coast City. It has similar objectives to those defined in the Regional Framework for Growth Management and the *Integrated Regional Transport Plan for South East Queensland*.

Key transport opportunities identified in the Gold Coast City Transport Plan and of relevance to the Tugun area are:

- Tugun Bypass – extension of the Pacific Motorway west of the Gold Coast Airport to link with the Tweed Heads Bypass in NSW;
- Gold Coast Highway – downgrading the functional road hierarchy to a coastal distributor road to reduce the impact of traffic growth in key tourist precincts; and
- providing efficient connections with the Gold Coast Airport.

The Gold Coast City Transport Plan recognises the importance of the proposed Tugun Bypass in providing a facility on the Gold Coast that separates through and local traffic and increases the efficiency and safety of the road system while accommodating the needs of all road users. This measure is a feature of the road network planning strategy contained in the plan.

The Gold Coast City Transport Plan also recognises the important role of the rail extension to Gold Coast Airport in achieving a more expansive and accessible public transport system that would satisfy travel demand in the region, particularly for those without cars.

### **2.1.8 Gold Coast City Activity Centre Strategy**

The *Gold Coast City Activity Centre Strategy* (1998a) was formally adopted by Gold Coast City Council in 1998. The *Our Living City – Gold Coast Planning Scheme* also references the findings of the Activity Centre Strategy, as a key planning strategy. It focuses on Council's urban development policy and preferred location of employment. The objective of the strategy is to provide a citywide framework of centres to enable development to occur in a logical and planned fashion.

The aim of the *Gold Coast City Activity Centre Strategy* is to encourage the location of jobs and services in urban centres close to where people live and to encourage a sense of identity and community. Designated centres are to be the focus of public and private employment growth, incorporating retail, community and government services, leisure and cultural facilities and transport infrastructure. Centres are to be located on major arterial roads and public transport routes, and to function as important public transport nodes.



The *Gold Coast City Activity Centre Strategy* provides a spatial distribution of hierarchical centres throughout Gold Coast City. Five centres are defined, based on the type and level of community activities they perform. The hierarchy of centres is:

- key regional centres – population catchment of 200,000 to 250,000 people, providing the highest order of cultural, entertainment and administrative services, as well as high concentrations of retail, office and specialist support functions;
- regional centres – population catchment of 100,000 to 120,000 people, providing district level emergency and health services, community centres, legal services and regional shopping centres;
- sub-regional centres – population catchment of 50,000 to 60,000 people providing a technical and further education (TAFE) institution, district library, legal referral services, community training and retail services;
- district centre – population catchment of 20,000 to 30,000 people, providing a high school, district recreational facilities, local health facilities, district post office, fire, police and ambulance service stations; and
- local centre – population catchment of 5,000 to 10,000 people, providing local shops, primary schools, convenience stores and a local sports field.

Additionally, the *Gold Coast City Activity Centre Strategy* defines 'activity clusters' which represent agglomerations of local areas based on either industry, educational or tourist specialisations. The intention of activity clusters is to enhance relationships between activities and to build upon the existing strengths and key activities of centres.

### **Key Regional Centres**

Coolangatta and Tweed Heads together are identified as a Key Regional Centre. They are to provide a range of services and facilities required by the combined communities on both sides of the Queensland-NSW border. In addition, Coolangatta is a strong tourist centre with the potential to be promoted with a diversification of activities.

### **District Centres**

Tugun is identified as a District Centre and currently provides a range of commercial and community activities. Due to its proximity to the Gold Coast Airport, Tugun has the ability to be promoted either as an area of tourist activity or for the continued consolidation and diversification of land uses.

Tugun is also identified as a medical-based specialist activity cluster as a result of its proximity to the John Flynn Hospital and Medical Centre.

The proposal is compatible with the *Gold Coast City Activity Centre Strategy* by way of encouraging the growth of centres in attracting residents and visitors to the different centres for retail, commercial and employment purposes by having access to a safe and efficient system of transport.

### **2.1.9 Gold Coast Bicycle Network Strategy**

The *Gold Coast Bicycle Network Strategy* (Gold Coast City Council 1996) recommended a citywide network of on- and off-road bikeways, and provided a set of policy and program recommendations directed at all levels of government, the community and the private sector. It also addressed issues including bikeway maintenance, end-of-trip facilities, public liability and education. The strategy was reviewed in the *Gold Coast Bicycle Network Operational Plan* (Gold Coast City

Council 2001a), which provided a strategy to guide forward planning of the bikeway network over a 10- to 20- year period, and an operational plan for the construction and maintenance of the network for the next five years.

### **2.1.10 Queensland State Planning Policies**

State Planning Policies are statutory planning instruments made by the Queensland Minister for the Department of Local Government, Planning, Sport and Recreation. They relate to matters of state interest.

There are currently six state planning policies. These are briefly discussed below in terms of their relevance to the proposal.

#### **Development in the Vicinity of Certain Airports and Aviation Facilities – Number 1/02**

This State Planning Policy (formerly Department of Local Government and Planning 2002a) sets out broad principles for protecting airports and associated aeronautical facilities from encroachment by incompatible developments in the interest of maintaining operational integrity and community safety. It sets out the State's interest concerning development in the vicinity of those airports and aviation facilities considered essential for the State's transport infrastructure or the national defence system, of which Gold Coast Airport (Coolangatta) is one. It is the responsibility of local government to ensure that there are adequate controls in place to regulate development in areas adjacent to aeronautical installations. Inappropriate land uses can limit aircraft operations and affect the safety of air traffic and the neighbouring community. Types of adjacent land uses that should be avoided are those that:

- create a permanent or temporary physical obstruction of operational airspace;
- require high intensity night lighting;
- create a bird hazard;
- emit exhaust fumes; and
- emit smoke, dust or other airborne pollutants across aircraft flight paths.

If inappropriately designed, ground and street lighting may cause confusion or distraction to pilots using the airport at night. This relates to the colour, pattern or intensity of light emissions above the horizontal plane. Correctional techniques can be used to reduce the risk associated with such lighting. The Civil Aviation Authority would be consulted during design to address potential problems.

Aircraft collisions with birds ('birdstrike') can result in severe damage to aircraft and also have a detrimental effect on bird populations. Concept planning for the proposed Tugun Bypass has taken into account measures to minimise the potential for attracting birds to the airport area when determining the location for sedimentation ponds and revegetated areas. Issues of landscape design are discussed in more detail in Technical Paper Number 13.

During construction, monitoring of the emission of airborne pollutants and exhaust fumes that could cross flight paths should be undertaken. Technical Paper Number 11 discusses measures for the mitigation of airborne pollutants.

Interference from emissions and road lighting on aircraft flight paths during operation of the proposed Tugun Bypass would be minimised as a sector of the proposal would be located within a tunnel where it crosses Gold Coast Airport.

### **Planning and Managing Development Involving Acid Sulphate Soils – Number 2/02**

This State Planning Policy (formerly Department of Local Government and Planning 2002b) aims to ensure that development involving acid sulphate soils is planned and managed to avoid the release of potentially harmful contaminants into the environment.

Coastal areas below 5m AHD (Australian Height Datum) where acid sulphate soils commonly occur are the subject of this State Planning Policy. Operational or infrastructure works that involve activities such as excavating, filling or dewatering can result in the aeration of previously saturated soils or sediments. Upon disturbance, acid sulphate soils can release harmful quantities of leachate containing acid and metal contaminants into the environment.

Several regions within low-lying sections of the proposed corridor have been identified as possessing acid sulphate soils or potential acid sulphate soils. Technical Paper Number 5 includes a management plan for the treatment of acid sulphate soils.

### **Development and the Conservation of Agricultural Land – Number 1/92**

This Stage Planning Policy (formerly Department of Local Government and Planning 1992) seeks to protect good quality agricultural land from subdivision into uneconomic units and to minimise the potential for land use conflicts between agricultural and non-agricultural land uses. There are no areas of agricultural land in the study area.

### **Conservation of Koalas in the Koala Coast – Number 1/97**

This State Planning Policy (formerly Department of Local Government and Planning 1997) concerns the conservation of koalas in south-east Queensland. The areas identified for koala conservation in this policy fall outside of the Koala Coast study area.

### **Mitigating the Adverse Impacts of Flood, Bushfire and Landslide – Number 1/03**

The intent of this State Planning Policy (formerly the Department of Local Government and Planning 2003) is that development should minimise the potential adverse impacts of flood, bushfire and landslide on people, property, economic activity and the environment.

The State Planning Policy includes criteria for determining natural hazard management areas for flood, bushfire and landslide. These hazards have been mapped within the Gold Coast Planning Scheme 2003, as follows:

- Potential bushfire hazard (Overlay Map 10)
- Areas of Unstable Soils and Areas of Potential Land Slip Hazard (Overlay Map OM16-34)
- Potential Flood Inundation (Overlay Map - OM17)

It is noted from the Overlay Maps that the study area is located in areas of defined Medium and High bushfire hazard areas, and defined Moderate – High risk areas for landslip, where adjoining the Queensland - New South Wales State border. Further, the northern periphery of the study area is located in the vicinity of suspected flood prone areas.

The development of particular uses, as defined in Annexure 1, within a natural hazard management area triggers assessment against the State Planning Policy. Under A1.2 of

Annexure 1, proposed 'State-controlled roads' are listed as a development to which the Policy applies.

### **State Coastal Management Plan**

The State Coastal Management Plan (Environmental Protection Agency 2002) describes how the coastal zone is to be managed. It seeks to provide ways to protect and manage Queensland's coastal resources, identified as natural and cultural resources which have associated ecological, economic and social values (State of the Environment Queensland 1999).

Under the Coastal Protection and Management Act 1995 the State Coastal Management Plan and subsequent Regional Coastal Management Plans have the status of State Planning Policies for the purpose of making and amending planning schemes and assessing and deciding development applications.

#### **2.1.11 Current Planning Schemes**

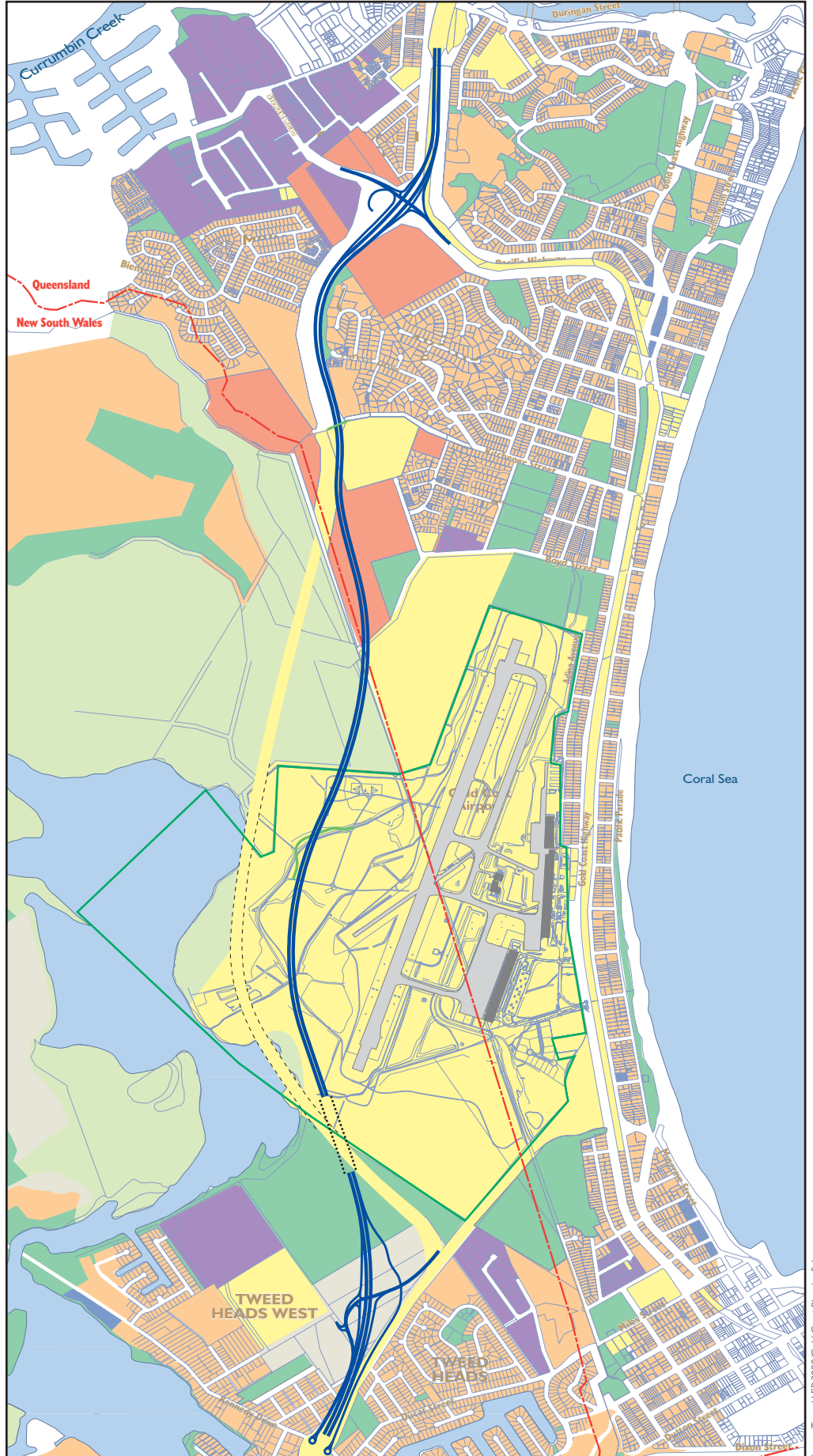
The current planning scheme for Gold Coast City Council's the *Gold Coast Planning Scheme – Our Living City* (2003). This planning scheme which received state government sign-off in may 2003 was formally adopted by Council on 6 June 2003 and commenced on 18 August 2003. It replaced the *Albert Shire Planning Scheme* (1995) and the *City of Gold Coast Planning Scheme* (1994) which were operating as transitional planning schemes under the *Integrated Planning Act 1997*.

The *Gold Coast Planning Scheme – Our Living City* is intended to advance the purpose of the *Integrated Planning Act 1997* to seek the achievement of ecological sustainability. The scheme highlights the importance of well balanced land use and development measures as being fundamental to the future of Gold Coast City.

The *Gold Coast Planning Scheme – Our Living City* represents the Gold Coast City Council's preferred policies and strategies for the future development of the city.

The Desired Environmental Outcomes, Planning Strategy, Domains and Local Area Plans are the components of the Draft Living City – Gold Coast Planning Scheme relevant to the proposal as follows:

- Desired Environmental Outcomes represent the core or primary focus of the scheme in that they represent policy outcomes to achieve ecological sustainability for the city – the proposal should assist in achieving these outcomes;
- The Planning Strategy covers long-term planning issues and defines strategies to guide overall development of the city and outlines land use themes – the proposal should be consistent with the long-term planning strategies;
- Domains divide the city into land units, with common characteristics, to provide for the distribution, mixing and segregation of different types of development – the proposal should not adversely affect the land units in the surrounding domains; and



- Proposed Tugun Bypass
- Gold Coast Airport Boundary
- Queensland/NSW Border
- Proposed Access Bridges
- Tunnel
- Environmental Protection
- Special Uses
- Industrial
- Open Space and Recreation
- Business
- Future Urban
- Rural
- Residential
- Reserved Corridor



Figure 2.1 Existing Generalised Land Use Zoning in the Study Area

Source: Tweed LEP, 2000; Gold Coast Planning Scheme

- Local Area Plans provide detailed planning guidelines and controls for specific areas within the city – the proposal should be compatible with the planning intents for any local area plans.

### **Desired Environmental Outcomes**

There are seventeen desired environmental outcomes that relate to ecological processes, economic development and community well-being. The sixth desired environmental outcome in the community well-being group has particular relevance to the proposal and is discussed below.

*Desired Environmental Outcome 6:* – The provision of a safe, clean, accessible and affordable transport system that efficiently connects the various parts of the city, and offers choice and convenience for residents and visitors.

Relevant planning objectives to support this desired environmental outcome are to:

- support the provision of efficient public transport infrastructure and service, particularly during the early stages of urban development; and
- develop and maintain an efficient road network.

The proposed bypass would assist in achieving this desired environmental outcome by separating local traffic from through traffic and increasing the potential for residents and visitors to use public transport with the extension of the rail line, improving connections between the Gold Coast Airport and the surrounding region.

### **Planning Strategy**

The Planning Strategy comprises fifteen key strategies and eighteen land use themes.

#### *Key Strategies*

The key strategies apply across the city and focus attention on particular aspects of land use and development in the city. The key strategies represent major citywide policy initiatives. The transport strategy has particular relevance to the proposal and is discussed below.

The transport strategy aims to increase the opportunities for non car based trips within the city and to reduce the social, environmental and economic costs of providing transport infrastructure.

The proposed Tugun Bypass falls within the strategic public transport development corridor for Gold Coast City. The transport strategy aims to achieve an efficient and flexible transport system to enable the optimal use of facilities and services throughout Gold Coast City. It consists of nine policies that are supported by appropriate planning objectives, of which four are relevant to the proposal.

*Transport Policy 2* – achieving and maintaining an effective road network.

Planning objectives to support this policy are to:

- facilitate a functional road hierarchy, with regional and higher order traffic movements, predominantly on highways and urban arterials and local access movements on local streets;
- provide for a continuous system of major roads, to meet moderated traffic demand to carry freight and public transport vehicles, with little direct access for individual properties;

- reduce conflict between residential amenity and through traffic, by delineating between roads designed for the movement of through traffic and local streets, which are to be designed as shared spaces for people and slow moving vehicles; and
- ensure that new major road systems are located and designed to minimise disruption to significant nature conservation areas, particularly core habitat areas and wildlife corridors.

*Transport Policy 3* – increasing the effectiveness of public transport infrastructure and services.

Planning objectives to support this policy are to:

- ensure that provision of sufficient public transport capacity within road corridors to meet Council's adopted public transport targets, while retaining sufficient capacity to carry the residual travel in private vehicles; and
- encourage the early construction of bus or rail stations so that their presence can influence the development of the new community and encourage a public transport culture from the start.

*Transport Policy 7* – protecting the use and operation of air transport facilities and services.

Planning objectives to support this policy are to:

- ensure that efficient land transport connections are maintained between Gold Coast Airport and the rest of the city, NSW and Brisbane; and
- to facilitate airport and land based transport connections that meet the air transport needs of domestic passengers, freight and general aviation, while managing acceptable impacts on the surrounding communities.

*Transport Policy 9* – ensuring that the design and operation of transport facilities encourages a safe, clean and attractive urban environment.

Planning objectives to support this policy are to:

- ensure that the design of transport facilities is functional, attractive and complementary to the character of the local area;
- provide for safe and secure travel on all parts of the transport system;
- minimise the impact of traffic and transport noise on local communities, by appropriate design and, where necessary, by the provision of noise attenuation devices;
- ensure that the design of new roads and transport facilities takes into account the potential for minimising any adverse impacts on air, water and soil quality; and
- ensure that the design and appearance of transport facilities and transport routes are consistent with the character of surrounding areas and contribute to the enhancement of the city's image and townscape.

The proposed bypass would assist in achieving these transport policies by:

- separating local and through traffic;
- increasing the potential for residents and visitors to use public transport with the extension of the rail line;

- providing opportunities to consolidate Gold Coast Airport's economic capabilities and connections in the region;
- avoiding significant nature conservation areas; and
- adequately addressing the occurrence and management of impacts of the proposal upon the surrounding environment to maintain a safe, clean and attractive urban environment.

#### *Land Use Themes*

Land use themes provide broad indications of the type of desirable land uses and development envisaged for Gold Coast City and are spatial representation of the key strategies in the planning strategy.

The proposal would pass through areas included under the following land use themes:

- Airport Investigation Area (though depicted as 'airport enterprise investigation' in the Land Use Themes - Planning Strategy Map PS-1 of the Planning Scheme);
- Residential/Tourism – Pacific Coast; and
- Urban Residential.

The intention of each of these land use themes and the compatibility of the proposal with each theme is discussed below.

The intent of the Airport Investigation Area Land Use Theme is to recognise and protect the economic and social importance of Gold Coast Airport to the Gold Coast region. Strategic objectives for this land use theme include promoting the long-term development of a safe and functional airport and making provision for a range of compatible land uses in the vicinity.

Given the high-level or broad-scale strategic designation of land as Airport Investigation Area, it is difficult to determine with certainty the cadastral extents of this Land Use Theme. However, it appears that the Area included in this land use theme extends from Kitchener Street, Tugun in the north to Johnston Street, Bilinga in the south.

With the growth of the Gold Coast region, residential and tourist development surrounding the airport has increased. There are houses located directly under flight paths that experience unacceptable noise levels. Some of these dwellings are within 500m of landing and take off areas. Other dwellings, located immediately to the east of the runway are subjected to noise and lighting intrusion as well as being isolated between the Gold Coast Highway and the main runway.

The Planning Scheme proposes appropriate action to further restrict residential densities, and will encourage land use activities compatible with airport operations (most likely to be commercial activities) in appropriate locations to the airport.

The proposal would assist the achievement of these intentions by improving accessibility to the airport.

The Residential/Tourism – Pacific Coast Land Use Theme intends to provide opportunities for the co-location of permanent residential accommodation and tourist accommodation, together with related services and facilities on the coastal strip. The area included under this theme runs the length of the coastal strip in the study area to Coolangatta. Tugun is recognised in the Planning Scheme as a particular character area



that favours a strong permanent residential component, complemented by low intensity tourist development.

The proposal would be compatible with this land use theme in improving the amenity and accessibility of the coastal residential/tourism strip by reducing traffic on the Gold Coast Highway.

The Urban-Residential Land Use Theme is intended to cater for residential uses and a range of other land uses that support local community needs. It includes a wide diversity of housing types and styles. Open space, recreation and nature conservation areas are also represented in this theme as these can form elements of urban character and neighbourhood amenity. In the study area, land in the Urban-Residential Land Use Theme is located between Stewart Road and Boyd Street. Part 6, Division 1, Chapter 1 of the Planning Scheme indicates that the Urban Residential Land Use Theme is of direct relevance to the Currumbin Hill Local Area Plan (located north-east of the proposed Stewart Road interchange).

The proposal would be compatible with this land use theme as it is primarily located in a road reserve and would not prohibit residential development. However, amenity impacts would be experienced in some residential areas and these impacts would need to be considered and mitigation measures developed where they are unacceptable. Further, it is expected that future development within this Land Use Theme will be supportive of planned transport infrastructure.

### **Domains**

Eighteen domains have been identified for the city. Each domain is intended to provide for compatible development within identified parts of the city and to segregate incompatible development.

Discussed below is the intent of each of the Domains that the proposed Tugun Bypass would pass through and adjoin, the general location of these domains and the implications of the proposal on these domains. They are also shown as Generalised zones in Figure 2.1.

#### *Rural Domain*

The intention of the Rural Domain is to support the provision of a wide range of rural activities and legitimate rural economic activity within suitable hinterland areas, whilst protecting nature conservation, open space and landscape interest values of the land. This Domain also seeks to ensure that Good Quality Agricultural Land (GQAL) is protected and is used in a sustainable manner. The Domain seeks to ensure the retention and expansion of both existing and new rural economic activities within the City, consistent with the area's natural values.

The subject land included in the Rural Domain is located to the west of the proposed commencement point for Stage 2.

The proposal is generally compatible with the land included in the Rural Domain in that it would be primarily located in a road reserve, and would not adversely impact on rural activities or GQAL. However, impacts to the rural amenity and values would be experienced. These impacts would need to be considered and mitigation measures developed where they are unacceptable.

### *Detached Dwelling Domain*

The intention of the Detached Dwelling Domain is to provide for low density residential areas that consist predominantly of low rise, detached dwellings that are well serviced in terms of urban facilities and transport. It is intended to preserve and enhance the suburban character and residential amenity of these low density residential neighbourhoods. This domain also seeks to enhance and promote the residential lifestyle attributes of privacy and quiet enjoyment of family life, with opportunities for residential based leisure pursuits.

The subject properties included in the Detached Dwelling Domain are located at:

- Mollys Place, Currumbin Waters, to the west of the proposed alignment and in the vicinity of the intersection of Stage 1 and Stage 2;
- Clancy Court, Tugun, to the east of the proposed alignment (albeit separated by public open space) and in the vicinity of the intersection of Stage 1 and Stage 2; and
- Inland Drive, Tugun, to the east of the proposed alignment, and adjoining the Queensland and New South Wales border.

The proposal is generally compatible with the land included in the Detached Dwelling Domain in that it would facilitate vehicle movements and transport from such areas, particularly by the proposed Boyd Street interchange. However, it is expected that some amenity impacts (acoustic or visual) may be experienced by residents of these properties. These impacts would need to be considered and mitigation measures developed where they are unacceptable

### *Residential Choice*

The intention of the Residential Choice Domain is primarily to provide a range of housing choice that is responsive to the changing demographic structure of the city, whilst maintaining an efficient land use pattern. It is intended that the Residential Choice Domain comprise mixed dwelling types, including detached dwellings, attached dwellings and apartment dwellings.

The subject land included in the Residential Choice Domain adjoins the proposed alignment to the east, south of Kitchener Street and west of Boyd Street in Tugun.

The proposal would be compatible with the Residential Choice Domain in so far as it is primarily located in a road reserve and would not prohibit residential development. However, amenity impacts would be experienced and these impacts would need to be considered and mitigation measures developed where they are unacceptable.

### *Industry 2 (Low Impact) Domain*

The purpose of Industry 2 (Low Impact) Domain is to generally provide and secure land for industrial, manufacturing and storage activities, which do not have a substantial adverse impact on the amenity of the surrounding area. It is intended to provide opportunities for the establishment and expansion of industrial activities.

The primary purpose of this domain is to accommodate those industrial uses which, by reason of the process involved, the method of manufacture or the nature of the goods and materials manufactured or stored, may contain any adverse impacts almost wholly within their own site boundaries.

As suitable land for industrial activity is a limited resource, it is intended to protect this Domain from encroachment by uses that can be better accommodated in other Domains. It is also intended that land in this domain be used as a buffer between high impact industrial land and sensitive uses such as residential use.

The subject land included in the Industry 2 Domain adjoins Stewart Road, Currumbin Waters, to the west of the proposed alignment.

The proposal would be compatible with the subject land in the Industry 2 Domain in that it is primarily located in a road reserve and would not exclude industrial development. The nature of the proposal, being road infrastructure, means that the nature of the activities occurring on this land would not be compromised (as there otherwise may be if new residential uses were introduced or existing residential uses were intensified).

#### *Community Purposes Domain*

The Community Purposes Domain is intended to retain and reserve land for community purposes and public infrastructure (including social facilities, physical infrastructure, service establishments and major institutions) that are essential for servicing the city.

The John Flynn Hospital and Medical Centre, the Tugun Landfill and Gold Coast Airport occupy land in the Community Purposes Domain. The proposal is not in conflict with the intentions of the Domain. However, as the John Flynn Hospital and Medical Centre are sensitive receptors, they would be susceptible to changes in amenity during the construction and operation of the proposed Tugun Bypass. Any impacts would need to be considered and mitigation measures developed where they are found to be unacceptable.

Gold Coast Airport is included in the Community Purposes Domain to recognise the importance of the airport facility, to ensure its efficient functioning by protecting it from urban encroachment and incompatible development and to facilitate opportunities for airport related commercial activity.

#### *Public Open Space Domain*

The intention of the Public Open Space Domain is to protect land in public ownership for nature conservation, outdoor recreation, landscape preservation, environmental buffers, natural resource management and natural hazard management purposes.

One parcel of land included in the Public Open Space Domain adjoins the proposed alignment to the west of the proposed commencement point for Stage 2. A second parcel of land included in the Public Open Space Domain is located on Boyd Street, to the east of the proposal, separating the John Flynn Hospital and Medical Centre from residential development to the north. A third area of land included in this Domain is located east of the proposed route, and immediately south of the Stewart Road interchange. This tract of public space separates existing residential development from existing residential development.

The proposed bypass would not compromise the intentions of this Domain as it has been planned to be constructed in areas that do not have nature conservation, recreational or landscape values.

## **Other Domain Map Considerations**

Domain Map - Currumbin 13 depicts both existing and proposed electricity transmission corridors in the vicinity of the Stewart Road interchange. Of particular note is the proposed 33kV line running parallel to the highway in Station Street. The detailed design of the proposed route will consider and include (as required) provision for any existing or proposed services that would otherwise be potentially impacted upon.

## **Local Area Plans**

Local Area Plans (LAP) are intended to provide more detailed descriptions of the planning intentions for specific areas. LAP exist for Currumbin Hill and Coolangatta.

### *Currumbin Hill LAP*

The boundary of the Currumbin Hill LAP is located north-east of the Stewart Road interchange. This LAP seeks to provide a management framework for development which minimises impact by ensuring a high standard of built form and maintenance, rehabilitation and enhancement of the natural environment. It also seeks to protect and enhance the natural and scenic values of Currumbin Hill Conservation Park by promoting sympathetic development and design in adjacent areas.

As previously indicated, the Urban Residential Land Use Theme is of direct relevance to the Currumbin Hill LAP.

The Currumbin Hill LAP area has been divided into five precincts, which have distinctive characteristics, and are a reflection of existing land use patterns and the preferred future development pattern for this local character area. Adjoining the proposed route are Precinct 1- Detached Dwelling and Precinct 5- Public Open Space.

It is intended that Precinct 1 contains mainly detached dwellings with low site coverage, in consideration of the difficulties of development on the steep slopes and to encourage the establishment and maintenance of extensive vegetation and landscaping.

It is intended that the parkland and open space contained in Precinct 5 are maintained in a natural state with extensive vegetation cover. Development is generally limited to passive recreation facilities, to maintain the natural profile and character of the area.

The proposal would be compatible with the development intent for both Precincts as it would be primarily located in a road reserve and would not prohibit residential development, nor would reduce the amount of available parkland and open space. However, amenity impacts would be experienced in some residential areas and these impacts would need to be considered and mitigation measures developed where they are unacceptable.

### *Coolangatta LAP*

The boundary of the Coolangatta Local Area Plan falls outside the area of anticipated impacts from the proposed Tugun Bypass.

## **2.1.12 Gold Coast City Council Local Laws**

A review of Council's listing of gazetted Local Laws was undertaken on 5 July 2004, determining that the proposal would not be in conflict with same.

## 2.2 NSW Planning Framework

### 2.2.1 Overview

The *Environmental Planning and Assessment Act 1979* is the statutory basis for planning in NSW. The *North Coast Regional Environmental Plan* and the *Northern Rivers Regional Strategy, Final Report, Phase One* (NOREDO, NOROCO and NSW Department of Planning 1998) also guide development in northern NSW. Relevant State Environmental Planning Policies are addressed in Section 2.2.7. Local planning in the study area is under the direction of the *Tweed Local Environmental Plan 2000*.

### 2.2.2 North Coast Regional Environmental Plan

Regional environmental plans cover issues such as urban growth, commercial centres, extractive industries, recreational needs, rural lands and heritage and conservation. They are made under the *Environmental Planning and Assessment Act 1979* and provide policy guidance to local authorities in preparing local environmental plans and assessing development applications.

The *North Coast Regional Environmental Plan*, released by the Department of Planning in 1988 and subsequently amended in 1994 and 1999, applies to northern NSW, including the Tweed local government area. The aims of the plan are to provide the basis for coordinating activities related to growth in the region, and to specify regional policies that guide the preparation of local environmental plans and that control development in the region.

The objectives of the *North Coast Regional Environmental Plan* with regard to regional transport infrastructure are to promote the safety and efficiency of the main road system of the region, particularly by recognising the importance of primary arterial roads, and to facilitate the maintenance and improvement of transport in the region.

This document states that a draft local environmental plan prepared for a primary arterial road should address the following:

- restrict access onto the road, except at specifically constructed intersections;
- separate through traffic and local traffic to bypass major urban areas; and
- control advertising signs and structures adjacent to adjoining roads, where safety, scenic or visual amenity would be impaired by their erection.

The proposal is consistent with the intentions of the *North Coast Regional Environmental Plan* for primary arterial roads.

### 2.2.3 Northern Rivers Regional Strategy

The *Northern Rivers Regional Strategy, Final Report, Phase One* has been undertaken to manage growth and development in the Northern Rivers Region in a way that integrates land use, social and economic planning and maintains the quality of life and environmental integrity of the region. The strategy is a joint initiative of the Northern Rivers Regional Economic Development Organisation, the Northern Rivers Regional Organisation of Councils and the Department of Infrastructure, Planning and Natural Resources. Outcomes from the Northern Rivers Regional Strategy include the publication of two reports. These are:

- *Guiding Principles for a Sustainable Future – Part 1* (1998); and

- *Real Actions for a Sustainable Future – A Business Plan for Phase Two – (1999).*

These two reports set a number of community priorities for maintaining the natural advantages and lifestyle of the region. These are to be achieved by providing a coordinated, strategic framework for different strands of planning and encouraging a sustainable transportation system. Though the reports acknowledge the need to ensure integration with transport plans in south-east Queensland, there is no direct reference to a proposed Tugun Bypass.

The current road system north of Stewart Road and south from the Tweed Heads Bypass is of a relatively high standard with grade separated interchanges and access restrictions. It is expected that the level of service and safety on the Gold Coast Highway will significantly degrade in the future. The proposed Tugun Bypass would bring the southern Gold Coast region in line with the standard of the surrounding road system.

Improving the public transportation system with the extension of the rail corridor from Robina to Gold Coast Airport is a measure to assist in decreasing traffic growth. These two factors would encourage the development of a sustainable transportation network.

#### **2.2.4 NSW North Coast Road Strategy**

The Pacific Highway is the main road transport facility serving the north coast of NSW. This region is the fastest growing non-metropolitan area in NSW. The *North Coast Road Strategy* (NSW Roads and Traffic Authority 1992) estimates growth for the region of between 100,000 and 450,000 people by 2016, on a base population of 470,000.

The strategy assumes that controls by state and local governments aimed at restricting dispersed growth patterns would either be maintained or strengthened. More dispersed growth would be undesirable, as it would increase overall traffic demand, reduce travel and energy efficiency and lead to undesirable environmental impacts. The strategy recognises that substantial increased demand for road travel will occur and that the present road network is considered inadequate to support future demands.

The document identifies the key issues and sets out strategies for the major road network, including the Pacific Highway between Hexham and Tweed Heads, as follows:

- it addresses the issues of road safety and the management of the road asset;
- it formulates network development options for the future within the context of population growth, urban development and the total transport system;
- it links the road infrastructure to the operation and development of the regional economy; and
- it examines the environmental implications of road network development.

The conceptual framework of the strategy is to manage the demand for transport rather than accommodating unlimited growth. However, the strategy has now been superseded by the Pacific Highway Upgrading Program, which focuses on developing the existing highway.

#### **2.2.5 NSW Pacific Highway Upgrading Program**

The NSW Pacific Highway Upgrading Program is being managed by the NSW Roads and Traffic Authority. The program aims to improve the existing Pacific Highway as the

principal north–south coastal route from Hexham to Tweed Heads, as set out in the *North Coast Road Strategy*.

Increased funding was made available by the NSW and Commonwealth Governments from 1996 to 2006 to undertake upgrading works along the Pacific Highway under the program. Its objective is to provide a higher standard road as a safer, more efficient highway link to the Queensland border. The NSW Roads and Traffic Authority aimed to reduce travel time by 60 to 90 minutes from Hexham to Tweed Heads, and make 60 percent of the whole highway a dual carriageway with limited access.

The Tugun Bypass would be the northern extremity of the upgrade in NSW, continuing through Commonwealth land and into Queensland to join the Pacific Motorway to Brisbane. Although consistent with the upgrade program, the bypass is not included on the NSW Roads and Traffic Authority program for funding.

### **2.2.6 Action for Transport 2010**

*Action for Transport 2010 — An Integrated Transport Plan For NSW* (NSW Department of Transport 1998) sets out a long-term vision for the expansion of the public transport network and the development of major roads and other transport infrastructure in NSW. It follows a 12-point action plan. Nine of the points are relevant to the proposal:

- meeting the needs of our growing and changing population;
- improving air quality;
- reducing car dependency;
- getting more people onto public transport;
- making freight more competitive;
- getting the best out of the system;
- giving the community value for money;
- making space for cyclists and walkers; and
- preventing accidents and saving lives.

The Tugun Bypass is not included in the proposals outlined in the plan, although the NSW Government is committed to upgrading the whole of the Pacific Highway north of Hexham to a dual-carriageway configuration.

### **2.2.7 NSW State Environmental Planning Policies**

#### **State Environmental Planning Policy Number 11 – Traffic Generating Developments**

The objective of *State Environmental Planning Policy Number 11 – Traffic Generating Developments* is to ensure that the traffic authority is made aware of, and given an opportunity to make representations in respect of proposed development works. As the policy is triggered by development works associated with the erection of buildings or the sub-division of land, it would have no influence upon this proposal.

#### **State Environmental Planning Policy Number 14 - Coastal Wetlands**

The aim of *State Environmental Planning Policy Number 14 - Coastal Wetlands* is to ensure that coastal wetlands are preserved and protected in the environmental and economic interests of the state. Wetlands listed under the policy are regarded as state significant. Where proposed development works are likely to affect designated

wetlands, an EIS must be prepared and concurrence sought from the Department of Infrastructure, Planning and Natural Resources.

*State Environmental Planning Policy Number 14* Wetland Number 5a fringes the north-eastern shores of Cobaki Creek and is adjacent to Gold Coast Airport. The proposed alignment for the Tugun Bypass crosses a small area of the wetland in the north-eastern corner where a buffer of casuarinas is located. The functional wetland comprises saltmarsh and mangrove communities which would not be directly affected by the proposal. As the proposal would affect this area, all relevant issues would need to be addressed in the EIS. More details on potential impacts are included in Technical Paper Number 12.

Further, construction activities in the vicinity of the *State Environmental Planning Policy Number 14*, Wetland Number 5a have the potential to affect the wetland through changes to surface and groundwater flows. Prior to construction, an environmental management plan would be prepared. This plan would outline necessary procedures to mitigate any impacts to the wetland area. These issues are addressed in Technical Paper Numbers 7 and 9.

#### **State Environmental Planning Policy Number 44 – Koala Habitat Protection**

*State Environmental Planning Policy Number 44 – Koala Habitat Protection* aims to encourage the proper conservation and management of areas of natural vegetation that provide habitat for Koalas. This is to ensure a permanent free-living population over their present range and reverse the current trend of Koala population decline. The policy involves the identification of potential and core Koala habitat areas. In identified core Koala habitat areas, a plan of management must be prepared before council can grant development consent.

In the study area, vegetation types have been identified as potential Koala habitat areas but extensive field work has failed to reveal any evidence of use of the area by Koalas. Therefore, the study area would not be classified as core Koala habitat pursuant to the conditions of *State Environmental Planning Policy Number 44*. More information on this issue is provided in Technical Paper Number 13.

#### **State Environmental Planning Policy Number 71 – Coastal Protection**

*State Environmental Planning Policy Number 71 - Coastal Protection* was gazetted on 1 November 2002. The policy aims to protect and manage the natural, cultural recreational and economic attributes of the NSW coastal zone for the benefit of the NSW community and future generations. It aims to ensure that development within the coastal zone occurs in a strategic manner, and that development is appropriate and suitably located in context to the adjacent and surrounding coastal attributes. The policy aims to ensure that coastal development does not place life and property in conflict or at risk.

### **2.2.8 Tweed Local Environment Plan – Land Use Zones**

The relevant local environmental planning instrument for the portion of the proposal within NSW is the *Tweed Local Environmental Plan 2000* (Tweed Shire Council 2000b). Relevant provisions of this plan for the proposed development include:

- Clause 17 - social impact assessment;
- Clause 31 - development adjoining waterbodies;



- Clause 34 - flooding; and
- Clause 35 - acid sulphate soils.

The requirements for each of these provisions have been addressed in the EIS and accompanying technical papers. In addition to this technical paper, relevant papers include Technical Paper Numbers 5, 7, 8, 9 and 12.

The *Tweed Local Environmental Plan 2000* also determines current land use zones for Tweed Shire.

Figure 2.1 shows current generalised zones in the study area. These zones have been simplified for clarity to show the basic intention for each area of land.

The proposed Tugun Bypass would pass through land included in the following zones:

- rural;
- open space;
- special use; and
- environmental protection (wetlands and littoral rainforests).

### **Rural Zone**

The intention of the Rural zone is to encourage the ecologically sustainable development of land that is suitable primarily for agricultural or natural resources purposes and to protect rural character and amenity.

Land zoned as Rural is located adjacent to the proposed Tweed Heads Bypass interchange. This land is currently vacant. Roads are a permissible use in Rural zoned land with consent under the *Tweed Local Environmental Plan 2000*.

### **Open Space Zone**

The intention of the Open Space zone is to identify existing public land and land that is proposed to be acquired for public ownership and to satisfy the open space and recreation needs of the shire.

The Tweed Heads Pony and Hack Club occupies the major area of Open Space zoned land and the proposed bypass would need to acquire land from this recreational facility. Implications of the proposed bypass for this site are discussed in Chapter 4.

Roads are a permissible use in land zoned Open Space without consent under the *Tweed Local Environmental Plan 2000*.

### **Special Use Zone**

The Special Use zone identifies land that is developed or is proposed to be developed, generally by public bodies for community facilities and services, roads, railways and public utilities. The Tweed Heads West Sewage Treatment Plant is located in this zone.

The intentions of the Special Use zone would not be affected by the proposed bypass as it would not intrude on major areas of Special Use land. Any amenity changes adjacent to the Tweed Heads West Sewage Treatment Plant would have minimal effect given its distance from the alignment and the nature of its operations.

Gold Coast Airport is also included in the Special Use zone. The *Tweed Local Environmental Plan 2000* has no jurisdiction over activities at Gold Coast Airport as it occupies Commonwealth land.

The *Tweed Local Environmental Plan 2000* reserves a corridor for a proposed Tugun Bypass under a Special Use 5(a) – NSW Roads and Traffic Authority zone. The proposed corridor is not consistent with the current alignment as it is based on an earlier study. However, the inclusion of a corridor for the proposed Tugun Bypass in the plan indicates that the proposal is consistent with Tweed Shire Council's planning intentions for the area.

Roads are a permissible use within both the Special Uses (5a) – NSW Roads and Traffic Authority and Airport zones.

### **Environmental Protection (Wetlands and Littoral Rainforests) Zone**

The Environmental Protection (Wetlands and Littoral Rainforests) zone identifies land where significant wetlands and littoral rainforests require protection and where development which could destroy or damage a wetland or littoral rainforest ecosystem is prohibited. No drainage, excavation or filling works can be carried out on land in this zone or on adjacent land, without development consent.

The proposed Tugun Bypass crosses the Environmental Protection (Wetlands and Littoral Rainforest) zone at Boyd Street, southwards to the perimeter of Gold Coast Airport.

Roads are permissible with consent and consideration under Clause 8(2) of the *Tweed Local Environmental Plan 2000*. However, as roads are not consistent with each of the zone objectives they are considered to be prohibited development.

### **2.2.9 Strategic Plan Tweed Shire 2000+**

The *Tweed Shire 2000+ Strategic Plan* (Tweed Shire Council 1997) is intended to provide a broad overview of Council's future intentions and directions in relation to development, the environment and infrastructure provision.

Desired outcomes for infrastructure planning include:

- a reduction in road congestion on coastal roads with the construction of an alternative inland transportation corridor; and
- a safe, effective and efficient transportation system accessible throughout the shire.

The proposed Tugun Bypass is consistent with these desired outcomes. It would assist to reduce road congestion and increase road safety on the Gold Coast Highway by way of an efficient inland transportation route.

## **2.3 Commonwealth Planning Framework**

### **2.3.1 Gold Coast Airport Master Plan**

Gold Coast Airport is situated on Commonwealth owned land. Land use and development within the bounds of Gold Coast Airport is controlled by the *Airports Act 1996*. The Act contains provisions for developing master plans for airports.

Gold Coast Airport is Australia's seventh busiest airport, catering for 1.9 million passengers per year. The airport meets the needs of international and domestic passengers and freight as well as the general aviation needs of the Gold Coast and Tweed Heads region.

The master plan for Gold Coast Airport has a 20 year strategic outlook and would remain in force for five years unless a replacement plan is approved.

The Final Master Plan for the airport was prepared by Gold Coast Airport Limited and approved by the Minister for Transport and Regional Services on 14 August 2001.

The master plan for the airport adopts the C4 corridor for the proposed Tugun Bypass, the extension of the rail line to Gold Coast Airport and the proposed road and rail tunnels.

The proposed land use plan for the airport identifies a number of precincts to assist in the management of development on airport land. The area of relevance to the proposed Tugun Bypass is the Western Enterprise Precinct. The intentions of this precinct are to:

- provide land for the proposed Tugun Bypass;
- provide for airport related activities and non-aviation activities; and
- provide an area accommodating commercial development that takes advantage of the area's accessibility to the major transportation network.

The Final Master Plan for the airport has made provisions for a bypass and rail corridor through airport land. From a land use planning perspective there would not be any conflict between the proposal and the development objectives for Gold Coast Airport. Physical and environmental impacts on the airport development areas are addressed within the EIS.

The master plan for the airport contains a land use strategy for its development to 2020. It presents a strategy for the long-term development of the airport in orderly phases reflecting anticipated demand. The plan also incorporates an assessment of the potential impact of the proposed developments on the environment. The Environmental Strategy for Gold Coast Airport (Gold Coast Airport Limited 1999) sets out how the airport will operate over a five year period. It addresses potential effects on the environment and sets out the outline of an environmental management system which is aimed at enabling the operator to meet all relevant environmental standards.

These procedures are aimed at satisfying the environmental management provisions of the *Airports Act 1996*. These would also apply via the preparation of a major development plan for the proposed Tugun Bypass and, ultimately, the rail line, to the environmental management of the proposal in the EIS.

### **2.3.2 Gold Coast Airport Prescribed Airspace**

Part 12 of the *Airports Act 1996* and the Airports (Protection of Airspace) Regulations 1996 provides for the protection of airspace around Gold Coast Airport now and in the future in the interests of the safety, efficiency or regularity of air transport operations.

The objective of prescribed airspace is to ensure that the areas used, or proposed to be used, by aircraft arriving at or departing from Gold Coast Airport are not adversely affected by the building of structures or other activities. New structures should be designed, or other activities controlled, to ensure they do not intrude into the present and future prescribed airspace surfaces.

## 2.4 Permissibility of the Proposal

In Queensland, a road corridor for the proposed Tugun Bypass has been reserved in the *Albert Shire Planning Scheme* (Albert Shire Council 1995). This corridor extends from Stewart Road to Mirreen Drive. Under the *City of Gold Coast Planning Scheme* (Gold Coast City Council 1994), the proposed alignment for the proposed Tugun Bypass is included in the Special Use zone from Boyd Street south to the Queensland-NSW border. Prior to road construction commencing, a development application for a material change of use would require approval by the Gold Coast City Council.

The *Integrated Planning Act 1997* in Queensland requires that development for the purpose of an environmentally relevant activity would require approval through the Integrated Development Assessment System. At present, road construction is not defined as an environmentally relevant activity. It is envisaged that road construction will become such an activity in the near future. The proposal may therefore require approval as an environmentally relevant activity when construction commences.

In NSW, the *Tweed Local Environmental Plan 2000* (Tweed Shire Council 2000b) includes provisions for undertaking development in different zones. The proposed Tugun Bypass would pass through five zones. Development for the purposes of a road would only be allowed with consent in the Rural 1(a) zone. Roads would be allowed without the need for consent in the Open Space 6(a) zone, Special Uses (NSW Roads and Traffic Authority Road) and Special Uses (Airport) 5(a) zones.

Within the Environmental Protection (Wetlands and Littoral Rainforests) 7(a) zone roads are allowed only with consent and consideration of Clause 8(2) of the *Tweed Local Environmental Plan 2000*. However as roads are not consistent with each of the zone objectives they are considered to be prohibited development.

Under Commonwealth legislation, a major development plan would need to be prepared under the *Airports Act 1996* prior to the building of any major element of airport infrastructure that increases airport capacity (for example, construction of a new road, vehicular access or a new rail facility) or any development that is likely to have significant environmental or ecological impact. Major development plans are subject to a process of community consultation and environmental assessment by the Minister for the Environment and Heritage. The major development plan must be submitted by Gold Coast Airport Limited for approval by the Minister for Transport and Regional Services. Prior to construction commencing any building activities (including roads, railways, tunnels and fences) on the airport site must be approved by the Airport Building Controller. This approval would require a formal building application to be lodged.



## 3. Land Use Patterns

### 3.1 Land Tenure

Figure 3.1 shows land tenure in the study area in terms of either government controlled or privately held land.

#### 3.1.1 Government Controlled Land

The major parcels of government land in the study area controlled by either Commonwealth, state or local authorities are as follows:

- Tugun Landfill;
- Gold Coast Airport (Commonwealth land, leased to Gold Coast Airport Limited);
- Tweed Heads West Sewage Treatment Works; and
- Tweed Heads Pony and Hack Club.

#### 3.1.2 Privately-owned Land

Some sites along the proposed route are held in private ownership. These are shown on Figure 3.1 as freehold land.

#### 3.1.3 Native Title Claim and Aboriginal Land Claim

There are no active native title determination applications, determination of native title or Registered Indigenous Land Use Agreements for the Tugun Bypass area (National Native Title Tribunal correspondence 17 March 2003).

An Aboriginal Land Claim has been registered on behalf of the Tweed Byron Local Aboriginal Land Council.

**Aboriginal Land Claim 3093 (DP 755740 – 56, DP 755740 – 57, DP 755740 – 58 (2 sections)).**

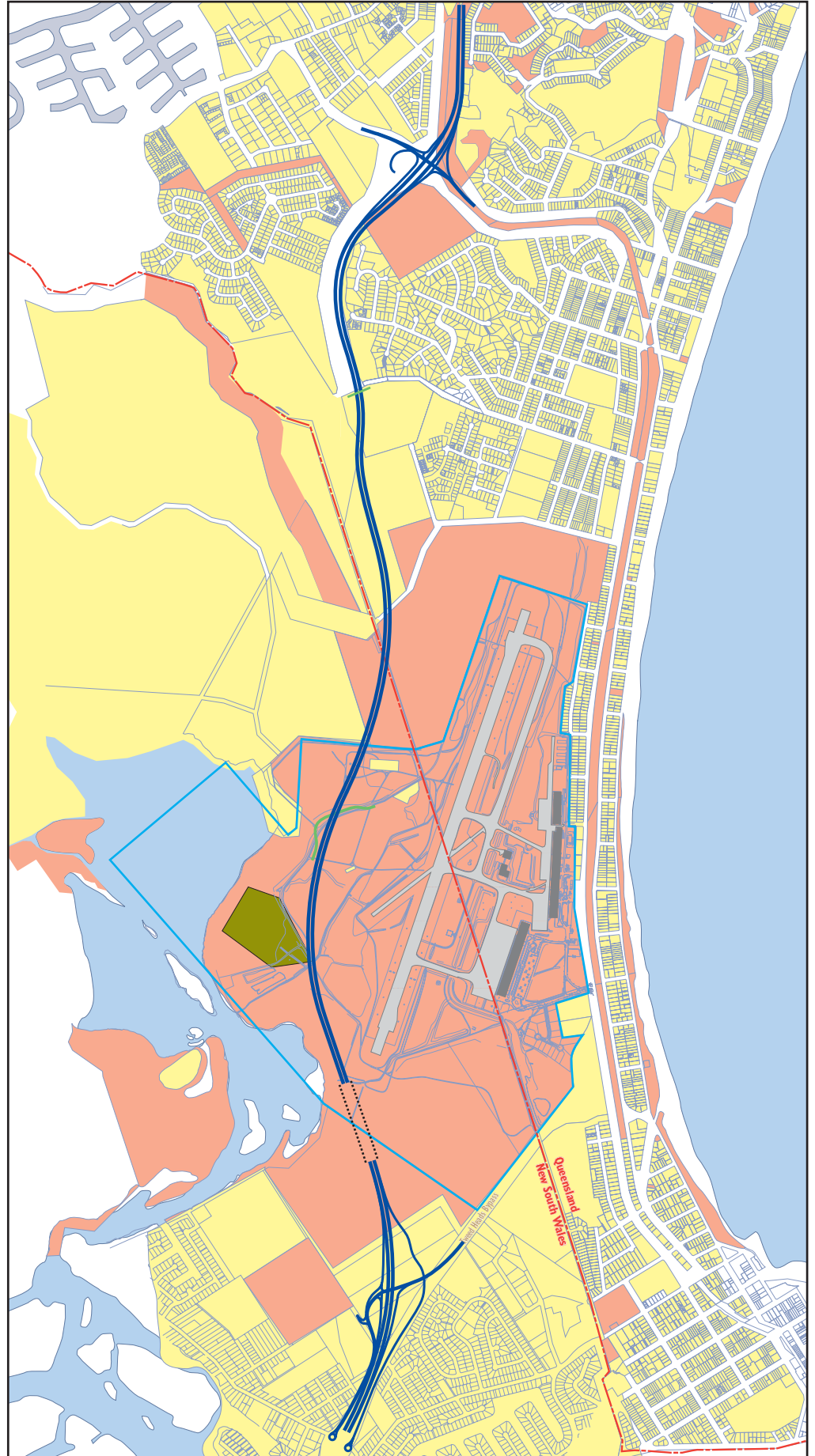
Advice from Ms Margaret Weiss (Principal Case Manager, Aboriginal Land Claim Investigations, Department of Infrastructure Planning and Natural Resources (formerly Department of Land and Water Conservation) regarding the current status of the land claim is that 'on 16 September 1992 the Minister refused about 7.1 ha of Claim 3093 on the grounds that it was needed or likely to be needed for the essential public purpose of access to residential lands. This is the parcel of land separating Lot 58 from Lot 321. The remainder of the claim being Lots 56, 57, 58 and 321 DP 755740 is still to be determined' (Department of Land and Water Conservation fax 8 April 2003). More detail on this Aboriginal Land Claim is provided in Technical Paper Number 14.

#### 3.1.4 National Estate Land

A sector of the proposed alignment would affect a small area of land included in the Register of the National Estate. Advice under Section 30 of the *Australian Heritage Commission Act 1975* has been received from the Australian Heritage Commission. This advice is addressed in the EIS and Technical Paper Number 14.

### 3.2 Existing Land Uses

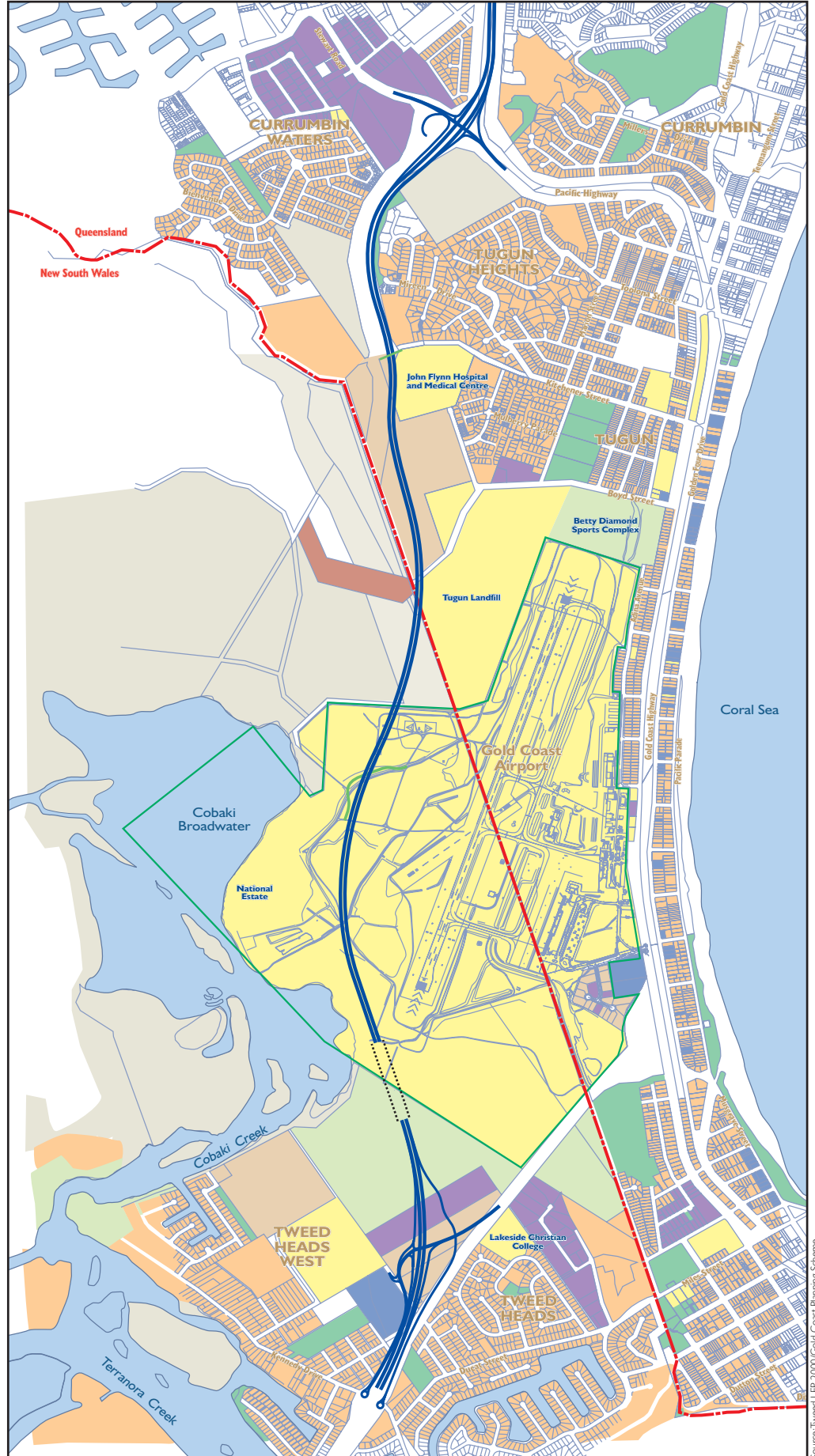
Existing land uses in the study area are shown on Figure 3.2.



-  Proposed Tugun Bypass
-  Gold Coast Airport Boundary
-  Queensland/NSW Border
-  Proposed Access Bridges
-  Tunnel
-  Freehold Land
-  Government Controlled Land
-  National Estate Area



Figure 3.1 **Current Land Tenure in the Study Area**



- Proposed Tugun Bypass
- Gold Coast Airport Boundary
- Queensland/NSW Border
- Proposed Access Bridges
- Tunnel
- Community/Special Uses
- Residential
- Industry
- Open Space
- Commercial/Retail/Accommodation
- Recreation
- Vacant
- Under Construction
- Undeveloped Bushland



Figure 3.2 Existing Land Uses in the Study Area

Source: Tweed LEP 2009/Gold Coast Planning Scheme



### **3.2.1 Community or Special Uses**

Land used for community or special uses consists of:

- John Flynn Hospital and Medical Centre, Tugun;
- Tugun Landfill, Tugun;
- Gold Coast Airport, Coolangatta; and
- Tweed Heads West Sewage Treatment Works.

### **3.2.2 Residential Uses**

The main areas of residential land consist of:

- low density residential development at the northern end of the proposed alignment near the proposed Stewart Road interchange;
- multi-unit residential development at Tugun Heights;
- low to medium density residential development at Pacific Beach Estate;
- low density residential development at the southern end of the alignment near the proposed Tweed Heads Bypass interchange; and
- multi-unit residential and resort residential development along the Gold Coast Highway and Golden Four Drive.

### **3.2.3 Recreational Uses**

The two areas of land used for recreational purposes are the:

- Betty Diamond Sporting Complex in Boyd Street, Tugun; and
- Tweed Heads Pony and Hack Club, Tweed Heads.

### **3.2.4 Industrial Uses**

Land used for industrial purposes is located at:

- Currumbin Waters Industrial Estate, Currumbin Waters at the northern end of the proposed alignment;
- at the southern end of the proposed alignment near the Tweed Heads Bypass interchange at Tweed Sandblasting on Parkes Drive;
- Ourimbah Industrial Estate, Tweed Heads; and
- Tringa Street Industrial Estate, Tweed Heads.

### **3.2.5 Commercial and Retail Uses**

Land used for commercial or retail purposes is located at:

- the corner of the Gold Coast Highway and Wagawn Street, Currumbin with a mix of commercial and retail development;
- Currumbin Beach, Tugun, Bilinga Beach and Coolangatta along the Gold Coast Highway and Golden Four Drive with a scattering of retail outlets and accommodation facilities;
- Coolangatta and Tweed Heads commercial areas;
- Boyd's Bay Garden World Nursery in Rose Street, Tweed Heads West; and
- service stations at Currumbin, Tugun, Gold Coast Airport and Tweed Heads.

### 3.2.6 Undeveloped Land

Areas of undeveloped land directly affected by the proposal are located at:

- the Pacific Beach Estate site to the north of Boyd Street (clearing of land for the development has started);
- NSW Crown land to the south of Boyd Street (includes wetlands); and
- the proposed Cobaki Lakes development site (development has commenced but has not been completed).

### 3.2.7 Agricultural Uses

There are no agricultural activities being undertaken in the study area.

More detailed information on community, recreational, industrial, commercial and retail facilities is given in Section 5.2.

## 3.3 Future Land Uses

### 3.3.1 Urban Development

The two major future urban developments in the study area are the Pacific Beach Estate and the Cobaki Lakes development. These are shown on Figure 3.3.

#### Pacific Beach Estate

Pacific Beach Estate is located to the north of the Queensland-NSW border adjacent to the John Flynn Hospital and Medical Centre. The proposed development consists primarily of medium and high density residential development that would be located near the proposed Tugun rail station.

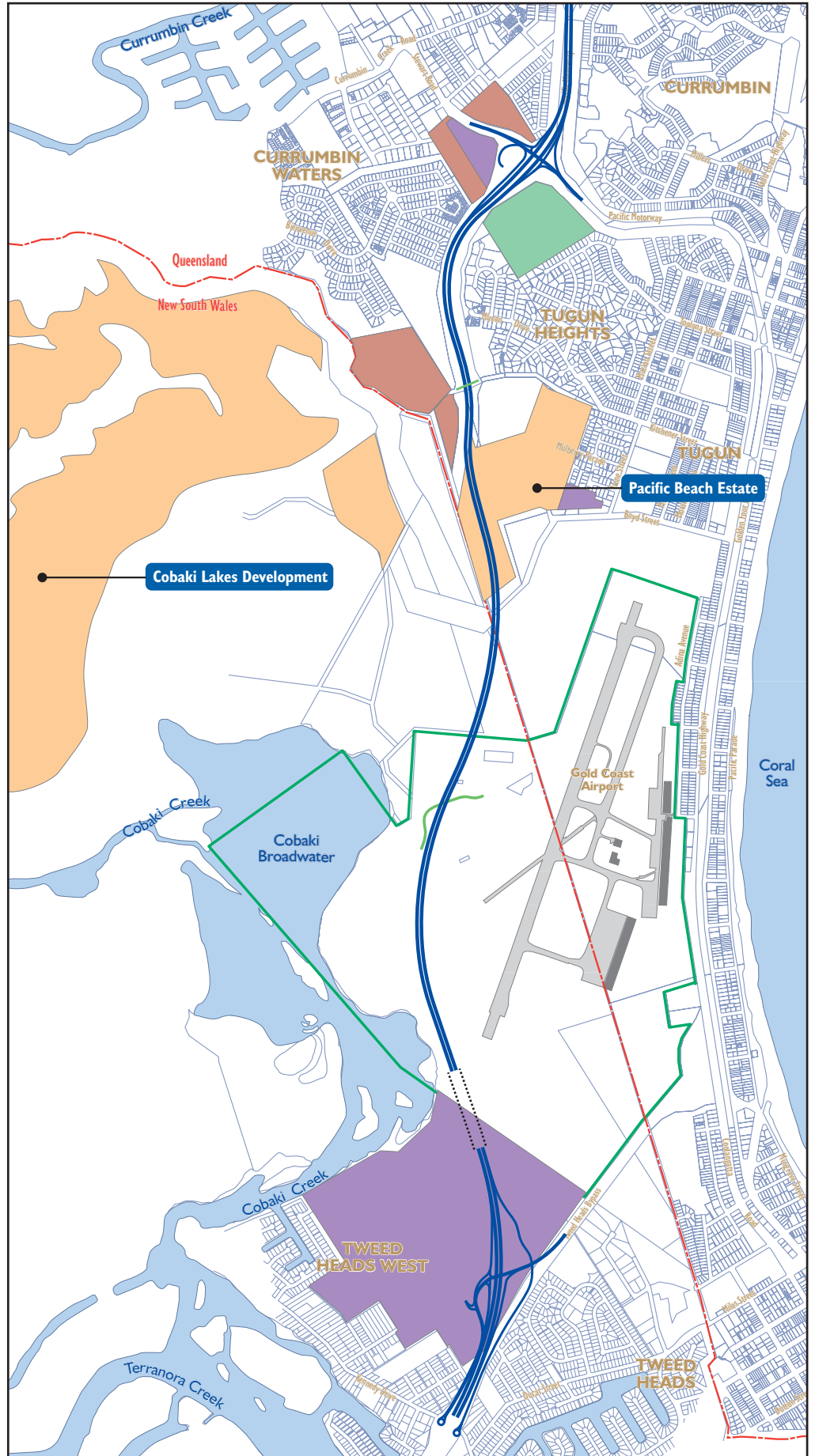
Initial stages of the Pacific Beach Estate have been built. Future stages are subject to two separate development applications lodged with Gold Coast City Council. Council officers have advised that both applications are currently the subject of appeals.

#### Cobaki Lakes Development

The proposed Cobaki Lakes development is located entirely within NSW and is a major area of future urban development. The current master plan for this development proposes a total gross developable area of 284.5 ha. The development has been divided into 21 parcels ranging from 1,162 Residential 'A' lots, 531 'greenstreet' lots, 202 duplex lots providing a total of 2,260 units with a capacity to accommodate 14,000 residents.

The development would eventually be serviced by two main arterials, namely Sandy Lane and Cobaki Parkway located on the eastern boundary. An existing road reserve connecting Cobaki Parkway to Boyd Street crosses the proposed bypass adjacent to Tugun Landfill.

The last section of Boyd Street located in Queensland is an unsealed gravel access track closed off by a locked gate. This is being used at present by construction traffic associated with the Cobaki Lakes development in NSW. The existing reserve is a possible cross-border link between Tweed Heads and the Gold Coast. The provision of an overpass at this location is included as part of the Tugun Bypass proposal to maintain future access. Long-term planning of the network does not preclude a future interchange at this location.












-  Proposed Tugun Bypass
-  Gold Coast Airport Boundary
-  Queensland/NSW Border
-  Proposed Access Bridges
-  Tunnel
-  Residential Development
-  Industrial Development
-  Conservation Area
-  Future Urban Zoned Land



Figure 3.3 Location of Cobaki Lakes and other Potential Development

Due to the capacity constraints of the existing road network, the Cobaki Lakes development is capped at 3,500 units until a connection to the proposed Tugun Bypass is provided. As a further condition of this development, prior to construction, the developer is required to upgrade the Boyd Street – Gold Coast Highway intersection to four lanes and extend it as far as the Gold Coast Highway.

The developer is also required to upgrade Boyd Street to four lanes when one of the following conditions is met:

- 2,900 lots are released;
- traffic volumes on the Gold Coast Highway at the Boyd Street intersection exceed 4,300 vehicles per hour (peak) for two-way traffic; or
- any approach to the Gold Coast Highway – Boyd Street intersection has greater than 0.9 of the saturation volume for that approach.

### **3.3.2 Future Urban Zoned Land**

A number of currently undeveloped parcels of land along the proposed alignment are zoned as Future Urban. These areas are:

- immediately south of Stewart Road and to the east of the proposed Tugun Bypass. This land has been purchased by Gold Coast City Council and will not be developed for residential purposes but will be retained as a conservation area;
- immediately south and north of Stewart Road, to the west of the proposed Tugun Bypass (a section of this parcel of land is zoned as industrial); and
- north of Boyd Street, west of the proposed Tugun Bypass and adjacent to the John Flynn Hospital and Medical Centre. This land is currently a private residence.

Additionally, the *Gold Coast Planning Scheme – Our Living City* (Gold Coast City Council 2003) identifies the study area as an area of potential redevelopment or infill development. These are areas of established urban form where some properties are of sufficient age and value to justify their demolition and redevelopment generally to a higher population density, or where there is vacant land suitable for development. Infill development works would be consistent with surrounding development.

### **3.3.3 Regional and District Centres**

The *Gold Coast Activity Centre Strategy* (Gold Coast City Council 1998a) envisages the growth of Coolangatta and Tweed Heads as Regional Centres and Tugun as a District Centre. This strategy is a key component in the future urban growth on the Gold Coast.

The proposal supports the objectives of the *Gold Coast City Activity Centre Strategy*.

### **3.3.4 Industrial Development**

Tweed Shire Council recently undertook a review of industrial land within the Shire. This report, *Potential Industrial Land Investigation in Tweed Shire* (Tweed Shire Council 2000a) identifies land surrounding Gold Coast Airport and Cobaki Broadwater as possible areas for future industrial purposes. A more detailed assessment of these areas would need to be undertaken to investigate site specific constraints (including the airport's obstacle limitation surfaces provisions) before development would be allowed.

Another feasibility study has been carried out (on behalf of Tweed Shire Council) for potential commercial/industrial land south of Gold Coast Airport. The report worked through a number of development scenarios, in the short- and long-term, with the intention of ultimately establishing a commercial/business park.

The *Employment Land Audit Stage 1 – Industrial Land* (1996) is an output from the Northern Rivers Regional Strategy. This document identifies vacant industrial land in the study area. At the Tringa Street industrial area in Tweed Heads West, there are 16 ha of undeveloped vacant land.

Approval has been granted to an industrial subdivision next to the Tweeds Heads West Sewage Treatment Plant.

### **Western Enterprise Precinct**

The Final Master Plan for the airport identifies three potential expansion areas for future development. Of relevance to this proposal is the Western Enterprise Precinct. Land within this precinct is primarily within the area of Tweed Shire Council with a small part within the Gold Coast City Council area. Intentions for this precinct are that it would be appropriately developed in the future.

Development that has been identified as being suitable in the precinct includes:

- airport-related activities (aircraft maintenance facilities, air freight terminals and ancillary aviation support activities such as flight catering, avionics and equipment maintenance); and
- non-aviation activities (industry, bulky goods retailing, ground transportation related activities, commerce and trade activities).

### **3.3.5 Proposed Rail Stations**

The Robina to Tugun Rail and Road IAS has identified possible rail station locations at Tugun and Gold Coast Airport.

#### **Proposed Tugun Rail Station**

The proposed Tugun rail station site would be located to the south-west of the Tugun Town Centre and to the north-west of Gold Coast Airport. It would be directly accessible from Boyd Street, occupying the southern edge of an area proposed for mixed-use development as part of the Pacific Beach Estate. Pacific Beach Estate is discussed in Section 3.3.1. Positive impacts would result from the integration of the proposed Tugun rail station with the mixed-use centre proposed for Pacific Beach Estate. It would present an opportunity to provide high intensity activities near the proposed rail station.

The proximity of the proposed Tugun rail station and nearby transit supportive development would assist accessibility to the John Flynn Hospital and Medical Centre and encourage workers and visitors to travel by public transport.

#### **Proposed Rail Station at Gold Coast Airport**

The proposed station at Gold Coast Airport would involve a range of short- and potential long-term functions. It would function as a modal public transport interchange for bus and rail services from Queensland and NSW, largely catering to airport users.

With any future commercial development adjacent to Gold Coast Airport the station's ability to attract more passengers who are non-airport users would be enhanced.

### **3.3.6 Nature Reserves and National Parks**

There are no current applications for the establishment of future nature reserves or national parks in the study area.

Cobaki Broadwater is currently being considered by NSW National Parks and Wildlife Service to form part of a National Parks Estate.



## 4. Land Use and Property Impacts

### 4.1 Potential Land Use Impacts

There are well established land use patterns and committed future land uses in the study area. Potential impacts of the proposed bypass on these land use patterns and the opportunities the bypass presents were considered during the concept development and option assessment phases of the study. The preferred alignment has been chosen to eliminate or reduce adverse impacts and to take advantage of its positive effects.

Potential impacts of the proposed bypass on existing and future land uses are discussed in the following sections.

Land use and property impacts that may be expected from the proposed bypass would arise from:

- the acquisition of land;
- changes to existing land uses on directly affected sites;
- effects on future land uses;
- changes to property access; and
- effects on the amenity of existing land uses surrounding the proposed Tugun Bypass.

Potential impacts are identified below with the exception of amenity impacts, which are discussed in Chapter 6.

### 4.2 Acquisition of Land

Details of the amount of land required for the proposed Tugun Bypass corridor, the properties directly affected by the acquisition of land and the procedures involved in acquiring these properties are outlined below.

#### 4.2.1 Corridor Requirements

Works for the proposed bypass corridor would extend approximately 7.4 km from north of Stewart Road, Currumbin to Kennedy Drive, Tweed Heads. The corridor varies in width from about 60 m to 90 m. This width does not include interchanges and the location of sedimentation basins. The proposed corridor for the rail extension to Gold Coast Airport would increase the corridor width by between 20 m to 30 m depending on earthworks required.

The majority of the road corridor would be constructed at grade with the exception of the 460 m long road tunnel and its approach ramps.

The construction of part of the proposed rail tunnel south of the main airport runway would require a corridor of land approximately 410 m long. It would have a maximum width of 35 m. This incorporates the actual tunnel structure and earth bunds either side.

#### 4.2.2 Properties Directly Affected by the Proposal

Properties directly affected by the proposed development are listed in Table 4.1. These properties either still require full or partial acquisition, are already owned by Main



Roads or require an agreement between the proponent and landowners. A total of 35 properties would be directly affected by the proposal. Figures 4.1a and 4.1b show the location of properties listed in Table 4.1, as indicated by reference numbers. Where an area considerably greater than necessary is acquired, the unused portion would either be sold on completion of the proposal, retained as compensatory habitat where appropriate, or rehabilitated as part of the landscape component of the bypass.

### **Queensland**

The construction of the Tugun Bypass (south of Stewart Road) in Queensland would affect six properties. Only one of these properties is privately owned and the remainder government owned.

Gold Coast City Council is responsible for the care and control of the government owned properties.

### **NSW**

The construction of the Tugun Bypass in NSW requires the acquisition of four privately owned lots and agreement about land owned by Tweed Shire Council, Commonwealth land and Crown land under the care and control of the Department of Lands. It may not be necessary for Main Roads to acquire land currently owned by the NSW Roads and Traffic Authority because after construction the portion of the proposal in NSW will revert to the control of the NSW Roads and Traffic Authority.

Ongoing discussions have been held with private landowners within NSW to inform and update them on the proposal and to obtain their feedback.

Where feasible, modifications to the alignment have been made to accommodate concerns expressed by landowners.

### **4.2.3 Procedures for Acquisition of Land**

Procedures for the acquisition of land required for the proposed Tugun Bypass vary between each of the jurisdictions. The legislative requirements for property acquisition for each state are outlined below.

#### **Queensland**

##### *Formal Acquisition*

The legislative instrument in Queensland for acquiring land for the purpose of building transport infrastructure is the *Acquisition of Land Act 1967*. This Act outlines the process and procedures to be followed when formally acquiring freehold land.

**Table 4.1: Properties Affected by the Proposal**

Number (refer to Figure 4.1a and b)	Property Description	Property Owner	Property Area (m <sup>2</sup> )	Approximate Area to be Acquired (m <sup>2</sup> )	Zoning	Current Use	Status
1	32RP112932 (Qld)	Main Roads	814	814	Residential	Residential	AC
2	33RP112932 (Qld)	Main Roads	607	607	Residential	Residential	AC
3	6 RP196131 (Qld)	Gold Coast City Council	144,352	1788	Future Urban	Vacant	AR
4	6RP855719 (Qld)	Pacific Exchange Corporation	240,345	59,512	Future Urban	Vacant	AR
5	3 RP837321 (Qld)	Gold Coast City Council	533,333	6,265	Special Use	Tugun Landfill	AR
6	Boyd Street (Qld)	Gold Coast City Council	Road Reserve	11,237	Road Reserve	Quarantine Area	BA
7	7046 DP92695 (NSW)	Crown Land	25,443	2,005	Environmental Protection/ Special Use	Quarantine Area	BA
8	321 DP755740 (NSW)	Crown Land	101,712	1,146	Environmental Protection/ Special Use	Vacant	BA
9	Land north and east of Lot 58DP755740 (710 DP726654) (NSW)	Crown Land	670,822	77,222	Environmental Protection/ Special Use	Vacant	BA
10	Boyd Street (NSW)	Tweed Shire Council	69,285	14,875	Special Use/ Environmental Protection	Vacant	BA
11	58 DP755740 (NSW)	Crown Land	245,937	4,690	Environmental Protection/ Special Use	Vacant	BA
12	4 DP854935 (Commonwealth)	Commonwealth of Australia	397	397	Special Use	Sublease to Gold Coast Airport	BA
13	2 DP535537 (Commonwealth)	Commonwealth of Australia	3,803,416	140,165	Special Use/ Environmental Protection	Gold Coast Airport	BA
14	319 DP755740 (NSW)	Crown Land	382,379	43,387	Open Space/ Environmental Protection/ Special Use	Tweed Heads Pony and Hack Club	BA
15	17 DP8655 (NSW)	Tweed Canal Estates	81,535	18,446		Tweed Sandblasting	AR
16	1 DP226067 (NSW)	Tweed Canal Estates	69,164	44,933	Rural	Vacant	AR
17	3 DP226067 (NSW)	Tweed Canal Estates	28,833	26,117	Rural/ Special Use	Vacant	AR
18	1 DP412404 (NSW)	Main Roads	650	650	Residential	Vacant	AC
19	5 DP226067 (NSW)	Main Roads	1,238	1,238	Rural/ Special Use	Vacant	AC
20	6 DP226067 (NSW)	Main Roads	20	20	Rural	Vacant	AC
21	Parkes Drive (NSW)	Tweed Shire Council		1,728	Road Reserve	Road	BA
22	6 DP849367 (NSW)	Caveda Pty Ltd	37,757	40	Special Use	Vacant	AR

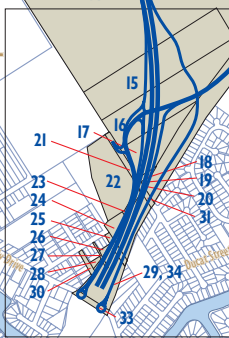
Number (refer to Figure 4.1a and b)	Property Description	Property Owner	Property Area (m <sup>2</sup> )	Approximate Area to be Acquired (m <sup>2</sup> )	Zoning	Current Use	Status
23	Rose Street (NSW)	Tweed Shire Council	2,534	1,954	Road Reserve	Vacant	BA
24	10 DP719753 (NSW)	Tweed Shire Council	4,097	2,327	Open Space/Road Reserve	Open Space	BA
25	Road Reserve (NSW)	Tweed Shire Council		312	Road Reserve	Road	BA
26	1 SP43056 (NSW)	Main Roads	1,081	385	Residential	Residential	AC
	2 SP43056 (NSW)				Residential	Residential	AC
	3 SP43056 (NSW)				Residential	Residential	AC
	4 SP43056 (NSW)				Residential	Residential	AC
	5 SP43056 (NSW)				Residential	Residential	AC
27	Banksia Street (NSW)	Tweed Shire Council		1,733	Road Reserve	Road	BA
28	1 SP41959 (NSW)	Main Roads	1,280	76	Residential	Residential	AC
	2 SP41959 (NSW)				Residential	Residential	AC
	3 SP41959 (NSW)				Residential	Residential	AC
	4 SP41959 (NSW)				Residential	Residential	AC
	5 SP41959 (NSW)				Residential	Residential	AC
	6 SP41959 (NSW)				Residential	Residential	AC
29	18 DP255367 (NSW)	NSW Roads and Traffic Authority	33,479	33,479	Special Use	Tweed Heads Bypass	BA
	19 DP255367 (NSW)						
	20 DP255367 (NSW)						
	21 DP255367 (NSW)						
	22 DP255367 (NSW)						
	23 DP255367 (NSW)						
	24 DP255367 (NSW)						
	25 DP255367 (NSW)						
	26 DP255367 (NSW)						
	27 DP255367 (NSW)						
	28 DP255367 (NSW)						
	49 DP10436 (NSW)						
	50 DP10436 (NSW)						

Number (refer to Figure 4.1a and b)	Property Description	Property Owner	Property Area (m <sup>2</sup> )	Approximate Area to be Acquired (m <sup>2</sup> )	Zoning	Current Use	Status
	51 DP10436 (NSW)						
	1 DP10297 (NSW)						
	1 DP207594 (NSW)						
	1 DP410364 (NSW)						
30	Honeysuckle Street (NSW)	Tweed Shire Council		401	Road Reserve	Road	BA
31	Parkes Drive (NSW)	Crown Land	1,356	1,356	Special Use	Road	BA
32	10 DP226067 (NSW)	Tweed Shire Council	39,790	39,790	Special Use	Tweed Heads Bypass	BA
	11 DP226067 (NSW)						
	12 DP226067 (NSW)						
	13 DP226067 (NSW)						
	14 DP226067 (NSW)						
	15 DP226067 (NSW)						
33	Kennedy Drive (NSW) (including 29DP255367)	Tweed Shire Council	2,992		Special Use	Road	BA
34	1 DP559828	NSW Roads and Traffic Authority			Special Use	Road	BA

Note: Current as of June 2003  
 AC = Acquisition complete  
 AR = Acquisition required  
 BA = By agreement

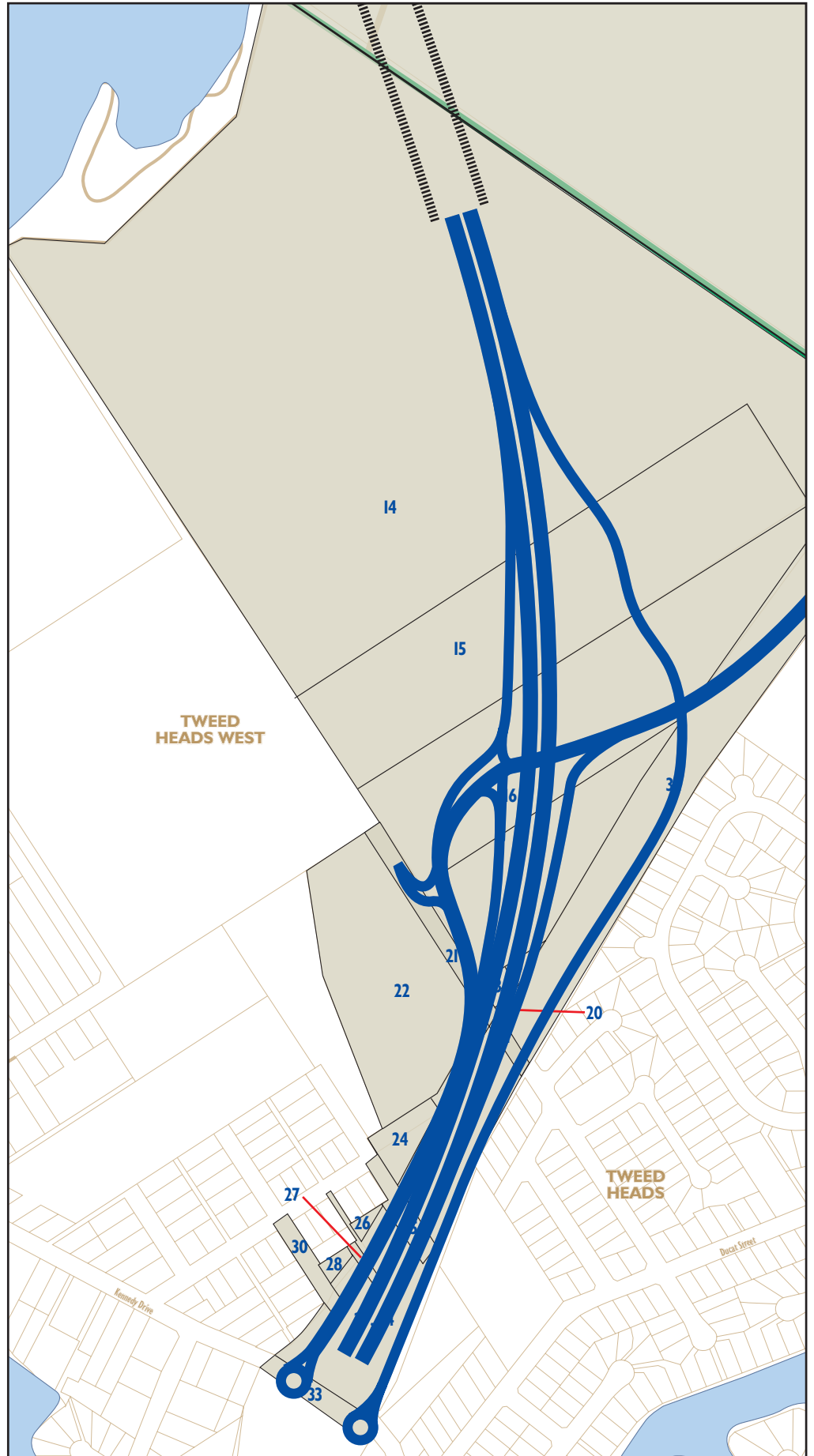
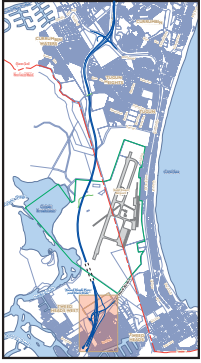


- Proposed Tugun Bypass
- Gold Coast Airport Boundary
- - - Queensland/NSW Border
- - - Proposed Access Bridges
- ⋯ Tunnel
- Affected Properties
- 22 Property Information



Refer to Figure 4.1b

Figure 4.1a Properties Affected by Loss of Land in the Study Area







-  Proposed Stage 2 Tugun Bypass
-  Gold Coast Airport Boundary
-  Affected Properties
-  Property Information



Figure 4.1b **Properties Affected by Loss of Land at the Southern End of the Proposed Route**

A simplified process involves:

- determining the minimum amount of land required for the project to proceed;
- issuing a 'notice of intention to resume' either part or whole of property;
- if owner does not object they can agree to the acquisition and submit a claim for compensation; and
- if the owner objects to acquisition they can lodge a formal objection to the acquisition. An objection hearing will be carried out between the two parties and a report on the hearing will then be sent to the Ministers office for a decision.

#### *Hardship Acquisition*

Hardship acquisition can be requested by owners of property who know Main Roads have a future land requirement from their property. Once a hardship request has been received Main Roads will commence negotiations to acquire the property by mutual agreement. If the two parties fail to agree on a mutually acceptable price, Main Roads will wait to acquire the property through the formal acquisition process outlined above. If price cannot be resolved during the formal process then both parties have the right to have the Land Court hear the claim and make a determination.

#### *Agreement*

The agreement process is instigated by Main Roads at its own discretion. The process of agreeing on compensation for the purchase of a property is the same as the hardship acquisition process.

#### **NSW**

The acquisition of land for the proposal in NSW would be conducted under the procedures and requirements of the *Land Acquisition (Just Terms Compensation) Act 1991*.

Consultation with affected property owners has been undertaken by representatives from Main Roads.

Main Roads is in the process of purchasing the directly affected private properties in NSW in fee simple by agreement. Should they not be able to obtain all the necessary properties, the NSW Roads and Traffic Authority will undertake compulsory acquisition of the remaining NSW properties on behalf of Main Roads.

Under Section 55 of the Act, an assessment of appropriate compensation must consider market value of the property if not affected by the proposal. In addition to the market value, consideration must also be given to the property's special value, severance, hardship, disturbance and any increase or decrease in the value of land adjoining or severed by the proposal.

Discussions are ongoing between Main Roads, Tweed Shire Council, the NSW Department of Land and Water Conservation and the NSW Roads and Traffic Authority regarding responsibilities for the management of land within the proposed corridor. The issues of compensation and maintenance are the subject of ongoing discussions with the relevant bodies.

## **Commonwealth**

Discussions with Gold Coast Airport Limited, the leasees of Gold Coast Airport, regarding the section of the proposed Tugun Bypass that traverses Commonwealth land have been undertaken throughout the assessment of the proposal.

The proponent may have several options in regard to establishing a corridor through airport land. These include:

- a license;
- an easement;
- a sublease from Gold Coast Airport Limited;
- freehold land excision; and
- a lease from the Commonwealth Department of Transport and Regional Services.

The final option has not yet been determined. Negotiations with relevant parties are continuing. Gold Coast Airport Limited have advised that a sublease arrangement would be the preferred option.

## **4.3 Impacts on Existing Land Uses**

### **Lot 3 RP837321 (Tugun Landfill) (Property Number 5)**

The proposed alignment would pass through a portion of land on the western side of the Tugun Landfill. This would affect the operations of the Tugun Landfill requiring the relocation of some material and the capping of remaining fill to prevent leaching of any contaminants into the water table.

### **Lot 4 DP854935 and Lot 2 DP535537 (Gold Coast Airport) (Property Numbers 12 and 13)**

The proposed alignment would traverse the western section of Gold Coast Airport to the south of the existing main runway. Impacts on the existing operations of the airport could include:

- intrusion into the obstacle limitation surface;
- possible relocation of navigational equipment;
- closure of the auxiliary (cross) runway;
- changes to the existing drainage system;
- potential operational interference during construction;
- potential operational interference during operation;
- changes to security fencing;
- land severance; and
- potential reduction in the area available for development.

Existing operation of the airport would be maintained with the implementation of a number of appropriate mitigation measures. These will be subject to discussion and negotiation with Gold Coast Airport Limited.

### **Lot 319 DP755740 (Tweed Heads Pony and Hack Club) (Property Number 14)**

The proposed bypass would traverse land currently used by the Tweed Heads Pony and Hack Club. The establishment of the proposed corridor would disrupt the club's regular activities, as well as sever areas used by the club for trail riding. Overall, the



proposal would reduce the amount of land available to the club and necessitate changes to its operation.

**Lot 17 DP8655 (Tweed Sandblasting) (Property Number 15)**

The proposed bypass would traverse land currently leased by Tweed Sandblasting. This property would be fully acquired and existing sandblasting operations unable to continue.

**Lot 5 DP226067 (Metro Advertising) (Property Number 19)**

One double billboard is currently located on this lot at the southern end of the proposed alignment. This lot would be fully acquired with the subsequent removal of the billboard.

**Lot 6 DP849367 (Caveda Pty Ltd) (Property Number 22)**

Boyd's Bay Garden World Nursery currently leases this block at the southern end of the proposed alignment. A small portion of land would be acquired from this property at the corner of Parkes Drive and Rose Street. The acquisition of this land would not impede the operation of the business.

**Lots 1 to 5 SP43056 and Lots 1 to 6 SP41959 (Residential Units) (Property Numbers 26 and 28)**

Five units in Banksia Street (Lots 1-5 SP43056) and six units in Honeysuckle Street (Lots 1-6 SP41959) would be fully acquired.

## **4.4 Impacts on Future Land Uses**

**Lot 6 RP855719 (Pacific Beach Estate) (Property Number 4)**

The proposal would require the acquisition of land zoned 'Future Urban' adjacent to Boyd Street. This site is to be developed for residential purposes as part of the Pacific Beach Estate development.

While the loss of this land would reduce the area available to the Pacific Beach Estate development, there would be compensatory benefits. The location of the proposed Tugun rail station would provide the opportunities for higher intensity uses with the integration of dual transport nodes with the mixed use centre proposed for Pacific Beach Estate.

The overall development potential of the Pacific Beach Estate would be enhanced by the proposal.

**Lot 4 DP854935 and Lot 2 DP535537 (Gold Coast Airport) (Property Numbers 12 and 13)**

The proposed transport corridor would traverse land in the western and southern sections of Gold Coast Airport. The future development of the airport has been outlined in the Final Master Plan for the airport, which has acknowledged the presence of the proposed Tugun Bypass and rail extension.

The proposal would benefit Gold Coast Airport by improving reliability of access to Gold Coast Airport through:

- reducing traffic volumes on the Gold Coast Highway and hence reducing the likelihood of delays;

- providing an alternative access to the airport via the proposed Tugun Bypass to reduce the risk of using a single route; and
- providing a new form of future public transport access to Gold Coast Airport via the proposed rail line.

## 4.5 Property Access

The establishment of the proposed transport corridor would require changes to access for several properties. The impacts of changes to property access are discussed below.

### **Lot 7 RP214065**

Current access to this property is via a narrow road located on the ridge behind the John Flynn Hospital and Medical Centre with access from Admiral Crescent. This access track would be reinstated in the form of a bridge overpass at Hidden Valley prior to the construction of the road cutting.

### **Proposed Cobaki Lakes Development**

The existing road reserve for Boyd Street/Piggabeen Road crosses the alignment of the proposal bypass adjacent to Tugun Landfill. The last section of Boyd Street in Queensland is an unsealed gravel access track closed to traffic but used at present by construction traffic associated with the Cobaki Lakes development in NSW. This road reserve is a possible cross border link between Tweed Heads and the Gold Coast. Provision for an overpass bridge at this location is included as part of the Tugun Bypass proposal to maintain future access to the development site. Long-term planning for the road network does not preclude a possible overpass or interchange at this location.

### **Lot 4 DP854935 and Lot 2 DP535537 (Gold Coast Airport) (Property Numbers 12 and 13)**

A number of minor access roads to western area of Gold Coast Airport would be altered or severed by the proposal. These roads are unsealed and provide access to navigational aids, training areas and security fencing. All existing access would be maintained where required, although some roads may be disconnected for short periods during construction.

### **Lot 6 DP849367 (Caveda Pty Ltd) (Property Number 22)**

The current access to this property via Parkes Drive would be maintained. Additional access via Rose Street would also be provided.

Access to Boyd's Bay Garden World Nursery would be enhanced by providing client access to the proposed service road connecting Kennedy Drive. Rose Street (which provides the current access) would be reconfigured into a cul-de-sac and no longer link to Parkes Drive reducing commercial traffic from the residential streets.

## 4.6 Mitigation Measures

### **4.6.1 Existing Land Uses**

In general, the alignment of the proposed Tugun Bypass has been designed to be located within existing or gazetted road reserves where possible. In areas where this has not been possible, steps have been taken to minimise land requirements and consider the concerns of the affected land owners (for example, property access changes and avoidance of houses/structures). Ongoing consultation with directly affected landowners assisted in identifying constraints to the proposed alignment which were ultimately taken into consideration when determining the final design.

### **Lot 3 RP837321 (Tugun Landfill) (Property Number 5)**

The management of impacts on the Tugun Landfill would generally involve the capping of remaining contaminated landfill, and treatment and relocation of excavated material.

More specific management measures for the removal of contaminated material from the Tugun Landfill are outlined in Technical Paper Number 6.

### **Lot 4 DP854935 and Lot 2 DP 535537 (Gold Coast Airport) (Property Numbers 12 and 13)**

Drainage on Gold Coast Airport land includes both overland and underground flows. The proposal would be designed and constructed to ensure that existing drainage networks are retained or replaced with alternative systems that maintain an appropriate drainage system, as outlined in Technical Paper Number 7.

Where the proposal would cross existing airport security fencing, adjustments would be made to ensure that security is maintained at all times. Discussions and negotiations with Gold Coast Airport Limited would be undertaken to ensure the most effective methods are adopted.

### **Lot 319 DP755740 (Tweed Heads Pony and Hack Club) (Property Number 14)**

Compensation for the loss of land and interruption of activities would be subject to negotiations between the proponent, Tweed Shire Council and the Tweed Heads Pony and Hack Club.

## **4.6.2 Future Land Uses**

The proposed Tugun Bypass would generally create an overall benefit to future development in the area, namely Pacific Beach Estate, Cobaki Lakes and Gold Coast Airport. Therefore, no specific mitigation measures would be required.

Compensatory measures for the loss of land and interruption of activities would be subject to negotiations between the proponent, landowners and leasees.

## **4.6.3 Property Access**

All existing accesses severed or impeded by the proposal would be reinstated as part of the proposed works. The details of access changes are set out below.

### **Lot 7 RP214065**

Access to this property would be relocated adjacent to the existing road in the form of a bridge overpass at Hidden Valley.

### **Cobaki Lakes Development**

Provision of an overpass bridge is included as part of the Tugun Bypass proposal to maintain future access to this development site. Long-term planning of the road network does not preclude a possible interchange at Boyd Street. Ramps associated with this bridge would be constructed as part of the extension of Boyd Street associated with the Cobaki Lakes development.

**Lot 4 DP854935 and Lot 2 DP535537 (Gold Coast Airport) (Property Numbers 12 and 13)**

Access to the proposed Cobaki Environmental Precinct (Gold Coast Airport Limited 2001) would be reinstated once proposals for its development are approved and access is required. This would be in the form of a bridge crossing of the road and rail corridor on the existing alignment.

**Lot 6 DP 849367 (Caveda Pty Ltd) (Property Number 22)**

Access to this property would be established by providing a new access via Rose Street, which would become a cul-de-sac, and retaining the existing access from Parkes Drive.

The construction of the service road would increase exposure for Boyd's Bay Garden World Nursery from passing traffic using the two-way service road.



## 5. Community Profile

### 5.1 Demographic Characteristics

#### 5.1.1 Information Sources

Figure 5.1 shows the boundaries of the statistical local areas used in compiling this demographic assessment. Demographic information is derived from the *Census of Population and Housing* (Australian Bureau of Statistics 2001). Additional community information was obtained from the Gold Coast City publication, *Our Community: A Social Profile of the City of Gold Coast* (Gold Coast City Council 1999) and addendum *Resident Population Update for June 2001* (Gold Coast City Council 2001b). Demographic information has also been obtained from the *Tweed Shire Council Social Plan 2002-2005* (Tweed Shire Council 2002a) and Tweed Shire Council web page (Tweed Shire Council 2002b).

Table 5.1 provides selected demographic statistics for the defined statistical local areas.

#### 5.1.2 Population Growth

Based on the results from the 2001 census the Australian Bureau of Statistics released estimated resident population figures for local government areas. The estimated resident population for Gold Coast City was 418,500 residents. The estimated resident population for the Tweed Shire at the same time was 74,380.

Figures from the 2001 census showed that the Gold Coast City Council had the second largest growth rate of any local government area in Australia, second only to Brisbane.

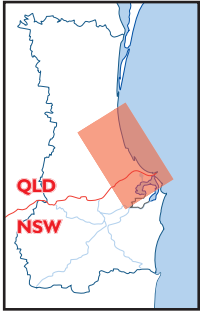
The Gold Coast City Council recorded an average annual growth rate of 3.2 percent from 2000 to 2001, slightly lower than the previous period, which was 3.4 percent. In comparison, Tweed Shire had an average annual growth rate of 1.9 percent per year between the 1996 census and the 2001 census. These growth rates are projected to continue and are higher than the Australian (1.2 percent), Queensland (1.7 percent) or NSW (1 percent) averages (Australian Bureau of Statistics 2002).

The population of Gold Coast City is forecast to grow at about 2.2 percent per annum to approximately 520,000 persons by 2011. The population of Tweed Shire is expected to increase to some 92,000 by 2011, a growth rate of 2.3 percent per annum. The southern Gold Coast area which includes the suburbs of Currumbin Waters, Currumbin, Bilinga, Tugun and Coolangatta is forecast to grow to approximately 25,300 persons by the year 2011.

#### 5.1.3 Age Structure

Resident population aged 65 years and over is highest in the local areas of Bilinga (31.9 percent), Coolangatta (36.9 percent), Tugun (24.8 percent) and Tweed Shire Part A (27.5 percent). In comparison, the percentage of resident population aged over 65 years is less in the local areas of Currumbin (16.1 percent) and Currumbin Waters (16.4 percent). These latter percentages are comparable to the figures for the Gold Coast (15.8 percent), Queensland (12.4 percent) and NSW (13.1 percent).

Bilinga and Coolangatta have 11 and 7.9 percent respectively, of their population in the 0 to 14 years age group. In comparison, Currumbin Waters and Tweed Shire Part A have 21 percent and 17.2 percent, respectively in the same age bracket.








-  Proposed Tugun Bypass
-  Gold Coast Airport Boundary
-  Queensland/NSW Border
-  Tunnel
-  Statistical Local Areas



Figure 5.1 Statistical Local Area Boundaries in the Study Area

**Table 5.1: Demographic Characteristics in the Study Area (2001)**

Characteristic	Statistical Area								
	Bilinga	Coolangatta	Currumbin	Currumbin Waters	Tugun	Tweed Shire Part A	Gold Coast	Queensland	NSW
Total Persons at Time of Census (a)	1,802	7,233	2,785	9,333	5,150	47,489	396,588	3,655,139	6,371,745
Indigenous Population (percent)	0.9	1.1	1.9	1.2	1.4	2.9	0.9	3.1	1.9
Age Structure (percent)									
0-14 years	11.0	7.9	15.2	21.0	15.1	17.2	18.6	21.3	20.8
15-24 years	10.2	9.1	12.7	11.6	10.7	8.8	12.8	13.8	13.3
25-34 years	9.6	9.4	14.1	11.5	11.8	9.3	14.1	14.2	14.5
35-44 years	11.1	9.9	14.1	15.8	13.3	12.2	14.4	14.9	15.3
45-54 years	13.3	12.6	16.2	14.1	13.6	12.6	13.7	13.7	13.5
55-64 years	12.9	14.2	11.6	9.6	10.7	12.4	10.6	9.7	9.4
Over 65 years	31.9	36.9	16.1	16.4	24.8	27.5	15.8	12.4	13.1
Labour Force Participation (percent)	43.8	40.2	62.3	58.4	52.4	44.8	60.9	63.1	62.2
Unemployment Rate (percent)	18.7	14.8	9.5	10.1	10.9	12.2	9.5	8.2	7.2
Weekly Household Income (percent)									
Less than \$500	45.3	49.0	29.5	33.9	37.3	44.7	31.7	29.9	27.9
Greater than \$1,000	20.4	14.1	27.0	25.9	22.0	17.8	28.6	31.1	36.9
Motor Vehicle Ownership Households (percent)									
No Motor Vehicle	14.2	20.6	7.6	6.0	10.6	11.4	9.0	9.3	12.0
1 Motor Vehicle	50.7	48.4	47.6	43.3	46.5	51.7	41.2	40.1	39.8
2 Motor Vehicles	19.9	12.7	27.7	34.0	28.1	24.1	31.3	32.8	30.2
3 Motor Vehicles	5.8	3.9	8.7	12.0	7.9	6.8	10.1	11.7	10.8
*Family Structure (percent)									
Couple with Children	14.0	11.0	20.4	34.7	23.0	46.7	29.6	34.9	56.4
Couple without children	25.6	25.0	28.9	29.7	28.8	26.4	28.5	26.0	19.2
One Parent Family	9.6	10.5	10.6	10.5	10.5	12.5	10.6	10.1	11.1
Lone Person	42.3	42.3	29.7	18.8	28.7	10.4	22.4	21.6	8.6
Group Household	7.0	9.2	8.1	4.2	6.8	3.3	6.7	5.0	3.6
Other	1.5	2.0	2.3	2.1	2.2	0.1	2.2	2.4	1.1

Source: Australian Bureau of Statistics, Census of Population and Housing 2001 Census (a); population figures include overseas visitors.

\* Figures based on Australian Bureau of Statistics, Census of Population and Housing 1996 Census.



#### **5.1.4 Indigenous Population**

In comparison to the figures for the Gold Coast (0.9 percent), Queensland (3.1 percent) and NSW (1.9 percent), the proportion of indigenous residents in the study area is marginally higher than for the Gold Coast but lower than for Queensland and NSW.

The proportion of indigenous residents in Tweed Shire Part A at 2.9 percent is the highest in the study area and exceeds the Gold Coast and NSW figures.

#### **5.1.5 Labour Force Participation**

The lowest labour force participation rates are found in Coolangatta (40.2 percent), Bilinga (43.8 percent) and Tweed Shire Part A (44.8 percent).

Higher labour force participation rates are in Currumbin (62.3 percent), Currumbin Waters (58.4 percent) and Tugun (52.4 percent). These rates are close to the Queensland and NSW figures of 63.1 percent and 62.2 percent, respectively.

#### **5.1.6 Unemployment Rates**

All the localities in the study area exhibit high unemployment rates, particularly Bilinga (18.7 percent) and Coolangatta (14.8 percent), when compared to the rates for Queensland (8.2 percent) and NSW (7.2 percent). Other localities in the study area have an unemployment rate slightly higher than the Gold Coast of 9.5 percent.

#### **5.1.7 Household Income**

The number of households with a weekly income less than \$500 is highest in Bilinga (45.3 percent), Coolangatta (49 percent), Tugun (37.3 percent) and Tweed Shire Part A (44.7 percent). These figures are higher than those for the Gold Coast (31.7 percent), Queensland (29.9 percent) and NSW (27.9 percent).

In contrast, the percentage of households with a weekly income greater than \$1,000 is highest in Currumbin (27.0 percent) and Currumbin Waters (25.9 percent). Though these figures are higher than for other localities in the study area, they are below the figures for the Gold Coast (28.6 percent), Queensland (31.1 percent) and NSW (36.9 percent).

#### **5.1.8 Motor Vehicle Ownership**

The percentage of households that do not own a motor vehicle is highest in Bilinga (14.2 percent) and Coolangatta (20.6 percent). This is well above the figures for the Gold Coast (9.0 percent), Queensland (9.3 percent) and NSW (12.0 percent).

The average ownership of one motor vehicle in the study area is 48 percent which is higher than the average percentage of 40.4 percent for the Gold Coast, Queensland and NSW.

The local areas of Currumbin, Currumbin Waters and Tugun have the highest percentage of ownership of two or more vehicles which are similar to figures for the Gold Coast, Queensland and NSW. In comparison, those local areas which have the lowest percentage ownership of two or more motor vehicles are Bilinga and Coolangatta.

#### **5.1.9 Family Structure**

The percentage of families comprising a couple with children is highest for the local areas of Currumbin (20.4 percent), Currumbin Waters (34.7 percent), Tugun

(23.0 percent) and Tweed Shire Part A (46.7 percent). The figure for Tweed Shire Part A is much higher than the figures for the Gold Coast (29.6 percent) and Queensland (34.9 percent) but closer to the figure for NSW (56.4 percent).

The proportion of the study area comprising a couple without children is 27.4 percent. This does not differ from the average for the Gold Coast and Queensland. However, the figure is higher than that for NSW at 19.2 percent.

Lone person households are highest in the local areas of Bilinga and Coolangatta at 42.3 percent each. These figures exceed those for the Gold Coast (22.4 percent) and Queensland (21.6 percent). The proportion of lone households in Currumbin, Currumbin Waters and Tugun is 26 percent. This figure is close to the average for the Gold Coast and Queensland at 22 percent. Tweed Shire Part A has the lowest number of lone person households at 10.4 percent, close to the NSW figure of 8.6 percent.

### **5.1.10 Demographic Analysis**

The following demographic characteristics emerge from this data.

- Bilinga and Coolangatta are characterised by an older population. These statistical local areas have lower incomes, workforce participation rates and motor vehicle ownership and higher unemployment rates. This is in comparison to the average for other statistical local areas in the study area or the Gold Coast. Lone person households are higher in these two areas. This suggests a predominantly resident semi-retired or retired population.
- Currumbin and Currumbin Waters are characterised by a younger population, with higher incomes, workforce participation rates and motor vehicle ownership and lower unemployment rates. This is in comparison to the average for other statistical local areas in the study area or the Gold Coast. Family structure predominantly consists of couples with children. This suggests a predominantly resident population of younger families and more recent settlement in the area.
- Tugun has an older population. Though more than a third of the households in Tugun have a weekly income less than \$500, the area does not have unemployment rates, or motor vehicle ownership as low as Bilinga and Coolangatta. However, it does not experience the same level of economic capacity as Currumbin and Currumbin Waters. The number of couple families with children and lone person households is similar to Currumbin. This suggests a mixture of resident retirees and young couples.
- Although characterised by an older population, Tweed Shire Part A also has a high percentage of young people and the highest proportion of indigenous residents. Unemployment rates are similar to Tugun, while weekly incomes are similar to Bilinga. This suggests a mixture of retirees and young families.
- Geographically, the area is characterised by the older established suburbs of Bilinga, Coolangatta and Tugun along the coastal strip with a retired population and more affluent and younger families located in Currumbin and Currumbin Waters which are the more recently developed suburbs in the study area.

## **5.2 Community Facilities**

The location of major community facilities in the study area are shown on Figure 5.2.

### **5.2.1 Educational Facilities**

There are seven schools located in the study area catering for all age groups. State schools are located at Currumbin Waters, Currumbin and Coolangatta. Two private schools are located at Tweed Heads. These are shown on Figure 5.2.

The location of Lakeside Christian College in Caloola Drive, Tweed Heads and its proximity to the proposed Tweed Heads Bypass interchange makes it susceptible to impacts from the proposed Tugun Bypass. The College is part of the Lakeside Christian Church, catering for male and female students from pre-school to Year 6 and has 150 students.

### **5.2.2 Health Facilities**

The study area has a full range of local health services including the Palm Beach - Currumbin Private Hospital and the Tweed Heads District Hospital and Health Service. The John Flynn Hospital and Medical Centre, which is a private hospital providing a range of health care and medical research facilities, is located off Boyd Street in Tugun, adjacent to the proposed alignment.

### **5.2.3 Places of Worship**

The location of Lakeside Christian Church in Caloola Drive, Tweed Heads and its proximity to the proposed Tweed Heads Bypass interchange makes it susceptible to impacts, in particular road traffic noise from the proposed Tugun Bypass.

### **5.2.4 Emergency Services**

Emergency services in the study area consist of two fire stations, two police stations, one ambulance centre, a State Emergency Service facility and an Air Sea Rescue facility.

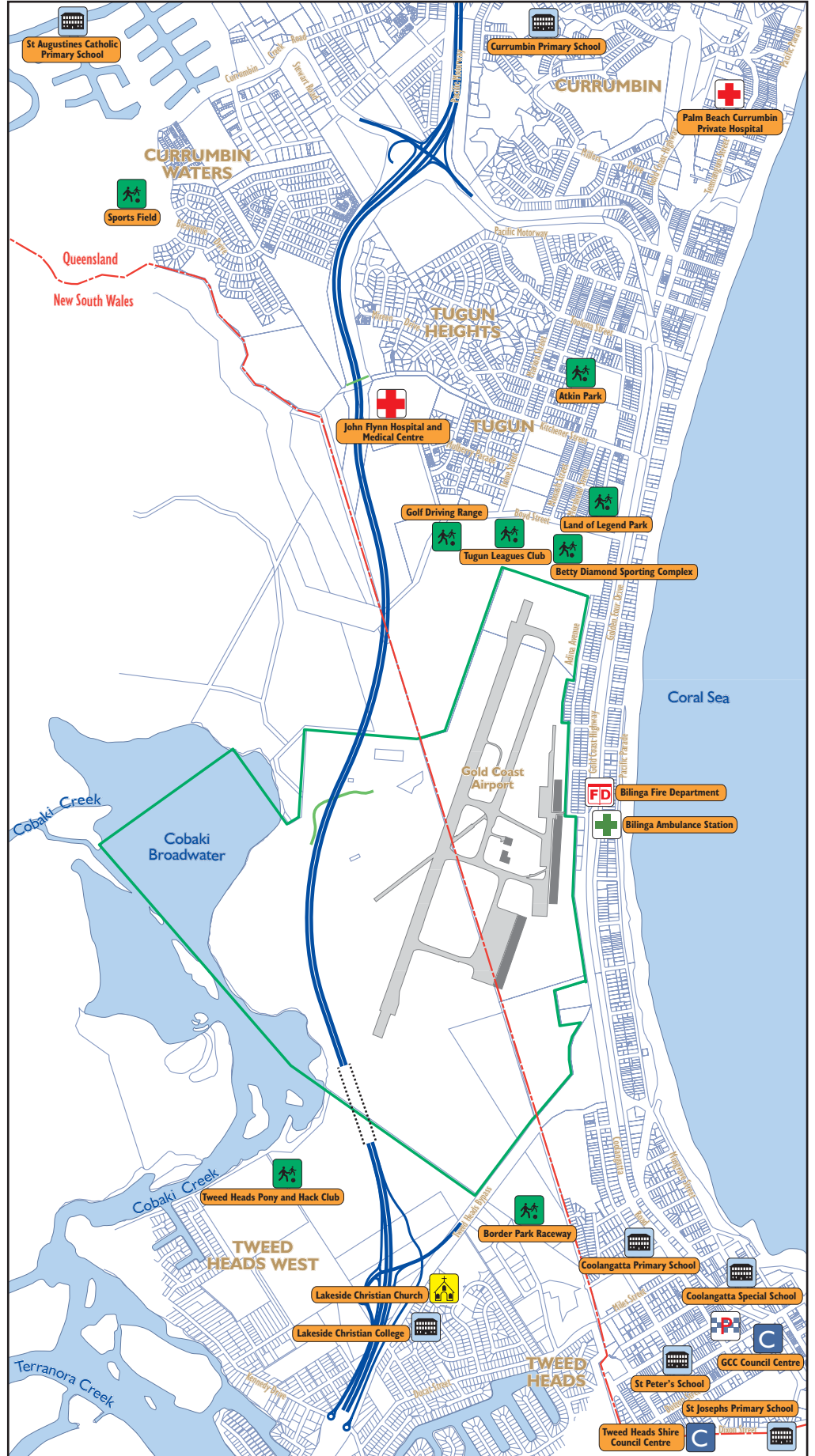
### **5.2.5 Sporting Facilities**

A range of sporting facilities is located in the study area. The Betty Diamond Sporting Complex in Boyd Street, Tugun accommodates the Tugun Leagues Club, the Tugun Soccer Club and provides playing fields, public amenities and facilities for cricket and skating. The complex serves the Tugun-Coolangatta area and is used by the Palm Beach-Currumbin High School, the Tugun-Coolangatta Rugby League Club, the Gold Coast Primary Schools Rugby League Club and the Tugun Soccer Club.

The other major sporting facility in the area is the Tweed Heads Pony and Hack Club, located at the southern end of the proposed alignment.

### **5.2.6 Local Organisations**

A range of local organisations such as progress and residents groups, service clubs, neighbourhood centres, hobby and recreational clubs, cultural organisations and religious groups exist in the study area.



- Proposed Tugun Bypass
- Gold Coast Airport Boundary
- Queensland/NSW Border
- Proposed Access Bridges
- Tunnel
- Hospital
- Fire Department
- Ambulance Station
- Recreation Facility
- Place of Worship
- School
- Council Office
- Police Station



Figure 5.2 Location of Major Community Facilities in the Study Area

### **5.2.7 Council Facilities**

A Gold Coast City Council Service Centre and public library are located at Coolangatta. A Gold Coast City Council depot and the Tugun Landfill are located in the study area.

### **5.2.8 Service Stations**

There are eight service stations in the study area. Two are located on the Gold Coast Highway, two on Golden Four Drive, one on Stewart Road and two on Kennedy Drive on either side of the proposed alignment. A new service station has recently opened behind the internal Gold Coast Airport road with an exit to the Gold Coast Highway.

### **5.2.9 Tourist Facilities**

The coastal strip from Burleigh to Coolangatta is a popular area for tourists and holiday makers and the Gold Coast Highway is used to access beaches, accommodation and shops.

The major tourist attraction in the study area is the beaches. Tugun Beach and Currumbin Beach are in the top 15 beaches on the Gold Coast in terms of daily usage with 600 and 900 visitors each. Popular beaches for surf riders are located in the study area, namely Currumbin, Kirra, Coolangatta and Tugun beaches.

The study area supports a full range of accommodation types to cater for the tourist market from caravan parks and motels to luxury apartments. The majority of accommodation in the study area is along the coastal strip on either the Gold Coast Highway or Golden Four Drive. Many of these establishments have been in operation for a substantial period and have a regular annual turnover of guests. There is also a large number of private apartments used as either a holiday retreat by their owners or rented privately to tourists and local holiday makers. The location of the Pyramid Caravan Park in Kennedy Drive, Tweed Heads and its proximity to the proposed Tweed Heads Bypass interchange makes it susceptible to impacts, in particular road traffic noise from the proposed Tugun Bypass.

### **5.2.10 Commercial, Retail and Industry Facilities**

The linear development along the coastal strip is the focus for commercial and retail activities catering to the local catchment, tourists and holiday makers. Coolangatta and Tweed Heads together, function as a key regional centre and Tugun functions as a district centre. They provide a range of commercial and retail services for the southern Gold Coast region.

Areas of industry are located at the Currumbin Industrial Estate, at the southern end of the alignment at the Tringa Street and Ourimbah Industrial Estates and in the vicinity of the Gold Coast Airport associated with airport activities.

## **5.3 Economic Environment**

### **5.3.1 Local Employment**

The Gold Coast is an important employment centre in south-east Queensland. In 2001, the majority of the workforce in Australia was employed in the private sector.

However, the proportion of Gold Coast City residents employed in the private sector was higher (80.9 percent) when compared to the figures for Queensland (78 percent) and Australia (76.9 percent). The main sources of employment in Gold Coast City in 2001 were retail, property and business services, manufacturing, accommodation, cafes and restaurants, construction and health and community services.

The levels of employment in various industries in Gold Coast City differ from those in Queensland with a higher proportion employed in retail, accommodation, cafes and restaurants, property and business services, construction and cultural and recreational services.

In 2001, areas in the southern Gold Coast Region with the highest number of jobs were located at:

- western Currumbin Waters, Tugun (between Kitchener Street and Boyd Street), Coolangatta (south of Gold Coast Airport) and Tweed Heads, with more than 400 jobs per square kilometre;
- Coolangatta (in the vicinity of Gold Coast Airport), with between 200 and 300 jobs per square kilometre; and
- Tugun (south of Boyd Street to the perimeter of Gold Coast Airport) and the southern end of Bilinga and Tugun, with between 100 and 200 jobs per square kilometre.

Projections for employment in 2011 indicate an increase in jobs available at:

- Coolangatta (in the vicinity of Gold Coast Airport) and Tweed Heads West, with between 300 and 400 jobs per square kilometre;
- Currumbin Waters (adjacent to the proposed alignment), with between 100 and 200 jobs per square kilometre; and
- Tugun (north of Kitchener Street), with between 200 and 300 jobs per square kilometre.

Similarly, regional and local plans applying the study area identify Gold Coast Airport, the key regional centres of Coolangatta and Tweed Heads, industrial areas at Currumbin and Currumbin Waters and the tourist and recreational areas spread along the coastal strip as focal points for employment.

### **5.3.2 Tourism**

Tourism provides the Gold Coast and the northern Tweed Heads region with its greatest number of employment opportunities and revenue. It is important in supporting residential and secondary industry growth. After Sydney, the Gold Coast is the most popular destination for international visitors to Australia. In 1997, of the total visitations to the Gold Coast, 70 percent were domestic visitors (Gold Coast City Council 1999).

### **5.3.3 Local Businesses**

The majority of local businesses in the study area are located along the coastal strip. Approximately 130 businesses are located along the Gold Coast Highway from the start of Golden Four Drive to its end at North Kirra Beach. A cluster of shops is located at the corner of the Gold Coast Highway and Wagawn Street. The area along Golden Four Drive accommodates a strip of apartments, surf shops and convenience stores.



## 6. Impacts on the Socio-Economic Environment

### 6.1 The Nature of Socio-Economic Impacts

#### 6.1.1 Responses to the Environmental Effects of Traffic Changes

The assessment of the impacts of the proposal considers its environmental effects under a number of discrete headings. These include the direct impacts resulting from the introduction of a major structure to the area (land take, removal of vegetation and visual impacts) and those effects consequent on the use of the new facility by traffic. These are more complex and more widely spread than those resulting from the road itself and include noise changes and effects on air quality. As these are a reflection of changes in traffic distribution, their influence is wider than merely within the area adjacent to the proposal.

The community experiences these impacts predominantly as a collective set of changes to the prevailing circumstances. The latter can be termed, for convenience, the amenity of the area within which the resident or visitor experiences the effects of the proposal. This area includes both the residence of those directly affected and the local environment through which the individual moves to visit friends and relatives or use facilities such as schools, shops, hospitals or local recreation areas.

Community perceptions of amenity and its response to changes brought about by the proposal including the disruption to local activities experienced during construction are therefore the concern of this section of the technical paper. Other papers describe the individual impacts visually related to a series of criteria defined to maintain what are considered to be acceptable levels of each effect. This section is concerned with anticipated community responses to these changes.

A number of studies have been undertaken to identify subjective attitudes to traffic nuisance and the effects of traffic on community behaviour. These include a study aimed at assessing levels of nuisance experienced at particular traffic columns especially responses resulting from the construction of bypasses to a number of towns with populations ranging between 1,000 and 55,000 (Transport and Road Research Laboratory 1981). The population of the area adjacent to the Gold Coast Highway where traffic reductions would be experienced is about 11,300.

One of the purposes of the study was to develop a method of predicting the environmental effects and public response in locations where changes in traffic flows are expected or proposed.

It was therefore important to establish the relationship between nuisance and traffic flow and identify those descriptors of traffic which are most useful in the prediction of nuisance. Overall, taking both before and after observations (obtained from interviews and measurement of impacts), the best single indicator was the number of heavy trucks although there was also a high correlation with traffic flow and the percentage of heavy trucks in the traffic mix.

Large improvements in environmental conditions occurred in all the bypassed towns although this was especially noticeable in the smaller ones. This was due to the strong



correlation between town size and the level of traffic relief. In this case only those towns with populations of less than 10,000 experienced traffic decreases greater than 50 percent following construction of the bypass. Residents along the Gold Coast Highway are expected to experience traffic reductions in the order of 55 percent.

The implementation of the proposed Tugun Bypass would result in changes to daily traffic volumes on the existing network as through traffic diverts to the new road. Reductions on the Gold Coast Highway and other local roads in the order of 50 percent and the removal of the majority of heavy trucks would result in noticeable improvements in environmental conditions and the amenity of residents living in adjacent areas and for visitors making use of local facilities.

A small number of local roads, notably Boyd Street, would experience large percentage increases in daily traffic on small existing flows. In part this is due to the effects of adjacent, large scale urban development which is currently taking place. While residents would experience an increase in noise levels, anticipated traffic volumes would not result in unacceptable conditions where applicable criteria are exceeded.

The proposed bypass would traverse land at some distance from sensitive receptors over most of its length. Noise impacts of traffic using the bypass would therefore be limited to an area at each end where it would connect to the existing network and in the northern section where some existing multi-unit developments are elevated above the proposed alignment. Noise impacts in these areas are discussed in detail in Technical Paper Number 10.

The following section deals with community perceptions and responses to the proposal rather than the specifics of individual environmental impacts such as noise, air quality and visual. These are discussed separately in Technical Papers Number 10, 11 and 13.

### **6.1.2 Social Impact Considerations**

Social impacts can result from:

- changes to access patterns;
- changes in amenity resulting from the redistribution of traffic;
- issues relating to road safety;
- perceptions of change; and
- property acquisition.

Potential social impacts associated with the proposed Tugun Bypass are discussed in the following sections.

The proposal considered in the EIS includes some structural components of the rail tunnel and sufficient material on the proposed rail corridor to justify its reservation for future development. With the exception of parts of the tunnel, no components of the rail proposal are included in the EIS. The technical paper therefore focuses on the anticipated social impacts of the road components of the proposal.

## 6.2 Potential Impacts and Mitigation Measures

### 6.2.1 Changes to Access Patterns

Changes to existing access patterns could affect vehicular, pedestrian and bicycle traffic. They would vary throughout the life of the proposal and would be most severe during the construction period.

Changes to access patterns during construction would be of most concern where partial road closures and diversions are required. These have the potential to create delays and cause difficulties in gaining access to local facilities and services. Partial road closures and diversions are likely to occur during construction of the proposed Stewart Road and Tweed Heads Bypass interchanges.

Access disruptions would also occur at the construction site compound to be located in the vicinity of the Tugun Landfill. The main access to this site would be via Boyd Street. This could create conflicts between construction vehicles and local traffic in this area. The main access to the John Flynn Hospital and Medical Centre is via Boyd Street. Access to this facility would be maintained and the movement of emergency vehicles not hindered or subjected to delays during the construction period.

Boyd Street is also used to gain access to the Betty Diamond Sporting Complex, the Tugun Leagues Club and Tugun Landfill. These are major community facilities used on a regular basis. In particular, the Betty Diamond Sporting Complex is used by local schools so there would be a steady weekday stream of users to the complex and access would need to be maintained. Along other parts of the proposed alignment, construction activities would be clear of existing roads and disruption to existing access patterns would be limited.

Partial road closures and diversions at the proposed Tweed Heads Bypass interchange would be managed by the use of diversions, the two-way service road near Kennedy Drive and limited construction activities at night. A traffic management plan would be prepared to maintain access to facilities in the study area. Elements to be incorporated in the traffic management plan are provided in Technical Paper Number 3.

Conflicts between construction and local traffic would be alleviated by the construction of an internal link along the proposed alignment between Stewart Road to Boyd Street for use by construction vehicles. The construction of this link would be dependent on the phasing of works in this area, particularly the bridge over Hidden Valley and the adjacent cutting. The feasibility of constructing such a link would be examined prior to the commencement of construction activities.

Prior to completion of a link from the north, the main access to the route corridor would be via Boyd Street.

Access disruptions would not be an issue during the operation of the proposed Tugun Bypass. The reduction in traffic and reduced speed environment along the Gold Coast Highway would serve to improve community interaction and access to facilities.

In addition, operation of the bypass would create considerable travel time savings between Stewart Road and Kennedy Drive. Travel time savings would improve accessibility in the local area for the community and the response times for emergency services.

## **Cyclist Movement**

The proposed Tugun Bypass would improve cycling conditions by:

- reducing traffic volumes on the Gold Coast Highway and its service roads, hence reducing the level of interaction between cars and bicycles;
- increasing local accessibility for cyclists through an increase in green time allocated to traffic signal phases on side streets;
- downgrading the function of the Gold Coast Highway and hence facilitating the reduction in the speed differential between cars and bicycles;
- removing the majority of larger heavy vehicles from the Gold Coast Highway; and
- providing crossing facilities on Tugun Bypass interchanges.

The Pacific Motorway and the Gold Coast Highway is the worst blackspot for accidents involving bicycles in the Gold Coast. The substantial reduction in traffic volume is expected to result in a reduction in the number of accidents along this corridor.

Although bicycle access would not be provided along the bypass itself, provision for cyclists on all the bridges over the proposal (Stewart Road and Tweed Heads Bypass) would result in an improvement in amenity, especially if future cycleways are linked to these connections.

Additional details on proposed cyclist facilities are provided in Technical Paper Number 3.

## **Pedestrian Movement**

There is currently an observed high demand for pedestrian movements between the Tugun Heights area and the strip of commercial development and the beach on the eastern side of the Gold Coast Highway at Tugun. Pedestrians crossing the highway to make this trip are required to do so at the signalised pedestrian crossing at the Kitchener Street intersection with the Gold Coast Highway. Crossings at other locations are unsafe due to the width of the highway, the speed of traffic and the proportion of heavy vehicles in the traffic stream.

There are significant delays to pedestrians attempting to cross the Gold Coast Highway at Tugun due to the through-traffic on the highway which is allocated a large proportion of the green time for the intersection. There are also delays incurred by traffic on the Gold Coast Highway when pedestrians trigger the signals at Kitchener Street due to the width of the crossing and the clearance times required for this width.

Traffic volumes on the Gold Coast Highway would increase without the proposed Tugun Bypass, requiring the highway to be widened at Tugun. This would result in increased difficulties for pedestrians crossing the highway with additional increases in the clearance time impacts on through-traffic.

Alternatives to reducing the volume of traffic on the Gold Coast Highway to improve pedestrian conditions include pedestrian underpasses or overpasses. Overpasses would introduce visual impacts in a landscape that is relatively flat, while underpasses would be susceptible to the effects of a relatively high water table as well as personal security issues associated with these facilities.

The construction of the proposed Tugun Bypass would provide opportunities to reduce the green time allocated to through-traffic movements and hence reduce the delays for pedestrians crossing the Gold Coast Highway. This would, in turn, reduce the

incentive to cross the Gold Coast Highway at other locations, resulting in safety improvements. The proposed Tugun Bypass also removes the need to upgrade the Gold Coast Highway to six lanes in the medium-term, ensuring that pedestrians only have two lanes of traffic to cross at a time.

An associated benefit to pedestrians would be the reduction in congestion on the Gold Coast Highway and the resulting reduction in traffic using the service roads to avoid delays on the highway. The safety of pedestrians in these areas, particularly where pedestrian-orientated land uses are present would be improved as a result.

### **Gold Coast Airport**

Several existing airport access tracks would be severed by the proposed bypass alignment. Gold Coast Airport Limited has requested that existing access conditions are retained or alternative access provided equivalent to the existing. This includes connection of an existing public access road to the west of the proposed bypass.

The Department of Transport and Regional Services requires that security fencing is provided around the airport for security reasons. The proposed bypass alignment crosses existing security fencing at several locations. Adjustments to security fencing would therefore be required.

### **6.2.2 Amenity Changes**

Noise, vibration and air quality impacts and changes to the visual character of the area can create amenity changes for the local community.

The major residential areas within the study area are:

- adjacent to the existing Pacific Motorway at Currumbin and Tugun Heights;
- a coastal strip fronting the Gold Coast Highway along Golden Four Drive and Coolangatta Road; and
- adjacent to the Tweed Heads Bypass in the vicinity of Kennedy Drive.

The completion of the proposed bypass would result in residential amenity improvements along the existing Pacific Motorway and Gold Coast Highway in terms of reduced levels of traffic noise and vehicle emissions and improved local accessibility.

#### **Noise**

An established relationship exists between noise and public health with effects ranging from annoyance to sleep disturbance. Construction activities associated with the proposed Tugun Bypass would result in temporary increases in ambient noise levels in the vicinity of the alignment. Noise levels would vary according to the extent, type and duration of construction activities.

Areas where noise impacts are likely to be experienced during construction activities include:

- Clancy Court, Alinjarra Drive, Mirreen Drive and Dinjarra Court at Tugun Heights;
- Mollys Place, Neeson Place and Chippendale Crescent at Currumbin Waters;
- Kiata Parade, Pontresina Avenue, Moolau Drive, Jalibah Avenue, Ducat Street and Kennedy Drive at Tweed Heads; and
- Parkes Drive, Rose Street and Honeysuckle Street at Tweed Heads West.

Noise impacts would also be apparent along Boyd Street, associated with the movement of construction vehicles to the main construction site compound.

Noise impacts from the operation of the proposed bypass would be associated with road traffic. The most affected residences in Queensland would be the multi-unit complexes at Clancy Court, Clanugan, Vista Pacific, Jarra Gardens, Jarra Views and Alin Gardens. The townhouse complexes in Mirreen Drive and the Lot 7 RP214065 property would also experience increases in road traffic noise.

The most affected residences in NSW would be located in Honeysuckle Street, Kiata Parade, Kennedy Drive, Moolua Avenue, Pontresina Avenue and Rose Street in Tweed Heads West. Increases in traffic noise would also affect residents in Ducat Street and Jalibah Avenue by 2017 following the growth in traffic over the 10 year period from 2007.

Noise impacts and potential mitigation measures during construction and operation of the proposed bypass are discussed in more detail in Technical Paper Number 10.

### **Vibration**

Vibration impacts in their simplest form are experienced as harmonic motions characterised by a frequency and amplitude and may occur at receptors within 40 m of heavy earthworks. Impacts from vibration would occur as a result of construction activities and can range from levels of annoyance to sleep disturbance.

Construction activities likely to create vibration impacts would be associated with:

- pile driving activities;
- the use of heavy construction equipment; and
- the use of vibrating steel drummed rollers.

These vibrations would be localised in effect and temporary in nature. Once construction activities are complete, no vibration impacts would occur and the operation of the proposed Tugun Bypass would not result in any such effects.

Vibration impacts and mitigation measures are discussed in detail in Technical Paper Number 10.

### **Air Quality**

Potential air quality impacts during construction would result from the generation of airborne dust and exhaust fumes. Airborne dust would be generated from vegetation clearing activities, excavation and transportation of materials, loading and unloading of vehicles and wind erosion from stockpiles and unsealed roads. Respiratory problems from dust are associated with fine particle exposure that can exacerbate symptoms of asthma and other respiratory diseases. Human health problems can also arise as a result of excessive levels of exhaust fumes from construction plant and equipment.

Most of the proposed Tugun Bypass is located at some distance from houses, so fugitive dust should not be a concern.

The main cause of air quality changes during operation of the bypass would be the redistribution of traffic as a result of improved travelling conditions and the diversion of high volumes of traffic to the new road. Vehicle emissions include pollutants such as carbon monoxide, nitrogen oxide traces, sulphur dioxide, particulate matter and unburned hydrocarbons. At excessive levels, these pollutants have the capacity to cause human health problems. The overall effect of traffic on the proposed bypass

would be the introduction of air pollutants into areas previously devoid of impacts from this source. This would apply to the entire length of the proposed alignment.

The effect of the proposed tunnel under the airport obstacle limitation surface would be to increase concentrations of pollutants at the portals. As there are no residential areas in the proximity of the tunnels, any effects would be negligible.

Following the opening of the proposed Tugun Bypass, the volume of emissions of carbon monoxide and hydrocarbons would be reduced for areas in proximity to the Gold Coast Highway. Results also indicate that relevant health guidelines for carbon monoxide, nitrogen dioxide and particulate matter would not be exceeded even for the worst case meteorological and traffic conditions in this area. As a result, the amenity of surrounding areas of the Gold Coast Highway would be improved.

Proposed mitigation measures for air quality impacts are discussed in Technical Paper Number 11.

### **Visual Amenity**

The proposed Tugun Bypass has the potential to change the existing visual landscape of the area. Changes to the visual appearance of the landscape would result from the introduction of major new elements that would be seen from various vantage points along, and in, the vicinity of the proposed alignment and from distant elevated positions. Visual changes have the capacity to affect:

- local character which refers to a sense of place;
- a traveller's experience through the area; and
- local amenity for residents in the study area.

Impacts during construction are those associated with major earthworks, the placement and movement of equipment and the appearance of unsealed roads and stockpiles of construction materials. These are transitory in part but the product of these activities would result in a gradual transition to a major change to the visual environment.

Visual changes associated with the completed bypass include the structure of the road itself and its interchanges and bridges, road cuttings and embankments and various types of ancillary features such as noise barriers and directional signs. An important impact is also a result of the continuously moving traffic using the road.

Visual impacts would be at their maximum on opening of the bypass gradually reducing as the roadside planting matures and the road starts to become part of the surrounding landscape. In addition, local residents, most of whom live at some distance from the proposal and would experience partial views of the bypass, gradually adjust to the change to their surroundings as perceptions of its impacts slowly lessen.

Visual impacts and proposed mitigation measures during construction and operation of the proposal are discussed in Technical Paper Number 13.

### **6.2.3 Road Safety Issues**

Congestion caused by construction activities could potentially affect road safety. The use of Boyd Street as the major access route to the construction site has the potential to create road safety issues given that this residential street is used frequently by residents to reach the John Flynn Hospital and Medical Centre and Betty Diamond Sporting Complex.

Traffic reduction on the Gold Coast Highway and the removal of a large proportion of heavy vehicles would improve opportunities for safe bicycle and pedestrian facilities to be incorporated both along and across the highway from Currumbin to Coolangatta.

Overall, the implementation of a traffic management plan would help to maintain and improve road safety in the study area. Important elements to be incorporated in the traffic management plan are outlined in Technical Paper Number 3. An internal link between Stewart Road and Boyd Street would also alleviate road safety problems that may arise if Boyd Street was to be used as the main access to the construction site.

#### **6.2.4 Community Perceptions**

Community perceptions of a proposal of this nature often arise out of the emotions triggered in individuals who may perceive the proposed development as an intrusion into their lives. This perception, rather than actual project activities could result in stress. Stress associated with construction activities is generally associated with the perceived lack of control over the process and is influenced by a person's individual characteristics.

These impacts which have so-called intangible costs are of concern to the community and cannot be easily assigned a monetary value in an assessment. These are the costs with respect to issues such as privacy and aesthetics and such emotions as frustration, helplessness and confusion. For instance, the community in the study area, although supportive of the proposed Tugun Bypass, have over the years been waiting for the project to commence. Some residents have become impatient as various studies have been undertaken. There is a perception that progress has been slow. Such perceptions, combined with other emotional factors have the capacity to become generators of stress.

These impacts, though difficult to measure, are acknowledged to be real issues for individuals, families and for the community in general. They need to be managed sensitively through appropriate community consultation.

Effective communication is a key tool to minimise perceptions of the severity and duration of problems associated with all impacts. This can be achieved through the implementation of a well-designed community consultation strategy.

Alerting the community to impending impacts will often eliminate the annoyance factor. Not being told can create a feeling in the community that they have been ignored which may invoke more anger than the impact itself. The establishment of community consultation procedures that promote effective dialogue with the local community during construction and provide the community with appropriate mechanisms to influence elements of construction which affect them would assist in lessening the negative aspects of perceived impacts.

Technical Paper Number 1 provides details of the community consultation process for the proposed Tugun Bypass.

#### **6.2.5 Property Owners Affected by Acquisition**

Individuals and families affected by property acquisition can become distressed, triggering a range of emotions that can fluctuate during the period required for the process.

In the first stages of acquisition, feelings of resentment, anger, fear and anxiety may be experienced. This can lead to feelings of helplessness or resistance associated with possible uncertainty and frustration waiting for a final decision to be made. Long-term, residents subjected to acquisition would go through a temporary period of social dislocation from their local community, while they settled into their new homes. Social dislocation can cause not only disruptions to daily life but also to future plans.

Impacts on affected residents cannot be fully predicted, nor can they be underestimated. They would differ in every situation and it is crucial that this period of uncertainty and potential hardship for residents is recognised and handled in a sensitive and caring manner.

Section 4.2 of this technical paper contains details on the Queensland and NSW governments' standard acquisition and compensation arrangements that would apply to properties subject to acquisition.

Social impacts of the proposed bypass relate to improvements in residential amenity along the existing Gold Coast Highway through reduced levels of traffic noise and vehicle emissions and improved local accessibility. Users of the area would also benefit from amenity improvements if the opportunities provided by the reduction in traffic are used to improve local amenity.

## **6.2.6 Transport and Local Business Impact Considerations**

### **Transport Network**

The proposed Tugun Bypass would divert through traffic away from the Gold Coast Highway between Tugun and Bilinga. The decrease in traffic using the existing corridor is predicted to be in the order of 55 percent with virtually all heavy vehicles diverting to the proposed bypass. Heavy vehicles along the Gold Coast Highway introduce a range of associated impacts such as air and noise pollution, visual intrusion and impacts on local traffic movements. The relocation of these trips to the proposed Tugun Bypass, away from sensitive land uses, would reduce these impacts along the Gold Coast Highway.

Improved local amenity conditions would flow-on from these reduced traffic volumes including a reduction in noise and vehicle emissions, improved access to local facilities and improved safety for motorists, cyclists and pedestrians.

### **Freight Movement**

The Pacific Motorway/Highway and Gold Coast Highway are strategic routes of national importance as they form one of the main road transport corridors between Brisbane, northern NSW regions and Sydney. Commercial vehicles, involved in transporting freight or conducting trade along the Gold Coast Highway, currently comprise approximately 13 percent of vehicles using this corridor on a daily basis, due to the Yelgun to Chinderah bypass.

The delays incurred on the Gold Coast Highway through Tugun/Bilinga currently have an effect on the efficiency of freight movements in terms of both average travel time and the variability in travel times due to congestion and crashes.

The proposed Tugun Bypass would attract longer-distance, higher-volume movements while there would still be some use of the Gold Coast Highway for local, smaller volume movements. Travel time and travel reliability benefits would accrue to both



types of movements as a result. The flow-on effects of this would contribute to increased efficiency and cost savings for freight operators.

### **Tourism**

The coastal strip between Burleigh and Coolangatta caters to tourists, shopping and through-traffic. This is a high turnover corridor with a number of entries and exits from the transport system to adjoining land uses.

By alleviating congestion along the Gold Coast Highway access to and travel along this corridor would ultimately be safer and less frustrating. A flow-on effect from these improvements to traffic conditions along the Gold Coast Highway may be improved local amenity and increased attractiveness of the coastal beaches. These consequences of the proposed bypass offer the area opportunities for increased tourism growth and the relaxed pursuit of recreational activities.

### **Local Businesses**

A number of local businesses within the study area are likely to be indirectly affected by the proposed bypass. The diversion of through traffic from the Gold Coast Highway to the proposed Tugun Bypass would result in a loss of exposure for these local businesses and a subsequent decline in passing trade for some. A random survey of local business along the Gold Coast Highway and Golden Four Drive was undertaken in February 2001 to canvass the views of business owners regarding the proposed bypass. Approximately 50 percent indicated that they relied on passing trade. Of these, approximately half thought that the loss of passing trade would have a negative impact on their business. The results of this survey are included as Appendix A.

While it is possible that some businesses may experience a decline in trade as a result of reduced exposure to passing traffic, improved amenity along the Gold Coast Highway may be beneficial for a number of local businesses along this corridor. Traffic travelling to Tugun, Bilinga or Coolangatta beaches would still use the existing Gold Coast Highway to gain access to these areas. In addition, improvements to local amenity arising from reduced traffic volumes are likely to increase tourist trade and attract the local community to frequent these areas on a more regular basis. Decreased traffic volumes would improve the overall amenity of the area providing benefits to local accommodation establishments.

Business sectors likely to benefit from the local amenity improvements created by the proposed bypass include the accommodation and tourism industries. Strategies such as focussing more on local trade, increasing advertising, diversifying product lines and relocating could be implemented by local businesses to minimise the effects of any loss of exposure to passing trade and improve the overall economic viability of the business.

In the short-term, local businesses, especially those catering to the needs of construction workers (food, drink, petrol and accommodation), can expect to benefit from the proposed bypass through increased patronage.

## **7. Impacts on the Local Economy**

### **7.1 Changes Resulting from Construction of the Bypass**

#### **7.1.1 Freight Movements**

Due to works associated with the construction of the proposed interchanges, there would be some increases in congestion on the Pacific Motorway, Gold Coast Highway and the Tweed Heads Bypass in the adjacent areas. This could cause delays for freight vehicles using these two corridors.

Currently, delays due to congestion and accidents on the Gold Coast Highway from Currumbin to Coolangatta affect the efficiency of freight movements in terms of average travel times and their variability. The proposed Tugun Bypass would attract longer-distance, higher-volume movements. Subsequently, when freight vehicles begin using the proposed Tugun Bypass, there would be an improvement in the reliability of freight travel times as conflicts between through and local traffic are alleviated. Reduced travel times and increased reliability would contribute to increased efficiency and thus cost savings for freight operators. This, in turn, would contribute positive effects to the local economy. Technical Paper Number 3 discusses these expected improvements in detail.

#### **7.1.2 Local Employment**

Access to the construction site is proposed via Stewart Road, Boyd Street and Parks Drive. The distribution of site traffic between Stewart Road and Boyd Street would be dependent on whether an internal roadway linking the two access points is constructed.

In the absence of a satisfactory link between Stewart Road and Boyd Street, the majority of site traffic would be expected to use Boyd Street. As a result, short-term access problems to local employment centres may be encountered owing to traffic delays. In particular, any employment centres in Boyd Street or commuters who use Boyd Street to gain access to employment may be affected.

The proposed Tugun Bypass would contribute to generating temporary minor local employment with a demand for construction workers and tradespersons. Indirectly, local businesses may experience a need for more employees created by a demand from construction activities for services.

It is not expected that employment centres would be adversely affected in the long-term. The easing of traffic congestion in the area would serve to expedite work trips. Workers travelling from northern areas to Coolangatta where employment growth is projected can expect to experience safer and faster travel times to their work place. Workers travelling north to gain access to employment centres in northern areas of the Gold Coast and in Brisbane or Beaudesert would be able to avoid using the Gold Coast Highway and decrease their travel time by using the proposed Tugun Bypass.

### 7.1.3 Tourism

As construction activities would take place away from the coastal strip where most tourist activity occurs, it is not anticipated that the construction phase of the proposal would adversely affect tourism in the study area.

A significant decrease in through traffic would result in improved local amenity would increase the attractiveness of visiting coastal beaches in the study area as access and travel along the Gold Coast Highway would be safer, faster and ultimately, less frustrating. A reduction in traffic volumes along the existing Gold Coast Highway would alleviate congestion at the entrance to Gold Coast Airport. Whether this has a direct effect on tourism for the area is questionable. These improvements offer the area opportunities for increased tourism growth and the relaxed pursuit of recreational activities along the coast.

### 7.1.4 Local Businesses

One service station near the Stewart Road interchange and the two service stations located on Kennedy Drive may experience some disruptions to trade during construction due to lane closures and general construction activities, hampering the usual flow of traffic.

During the construction stage, local businesses would benefit from patronage by construction workers in the form of an increased demand for lunches, food and drink, petrol and accommodation.

An indirect impact resulting from the diversion of traffic from the Gold Coast Highway would be a loss of exposure for local businesses along the highway and Golden Four Drive, with a possible decline in passing trade.

A random survey of local businesses located along the Gold Coast Highway and Golden Four Drive was undertaken in February 2001 to canvass views from business owners regarding the proposed Tugun Bypass. The results of this survey are included in Appendix A.

Survey participants indicated that the main sources of their trade came from a combination of local residents, passing traffic and tourists. Generally, the type of business determined the type of trade attracted. This is listed below:

- holiday apartments and hotels relied on passing traffic and tourists;
- service stations and fast food outlets relied on local residents, passing traffic and tourists;
- restaurants relied primarily on tourists and local residents with a small percentage of passing traffic; and
- convenience stores, second-hand stores and newsagents relied on local residents.

Approximately half of those surveyed, felt that the proposed Tugun Bypass would have an impact on local businesses. Concern was expressed in regard to a loss of passing trade for hotels and restaurants and the future viability of service stations and fast food outlets. Concern was expressed by a few participants who felt that construction activities would adversely affect local businesses.

For those participants who felt that positive effects would be gained from the proposed Tugun Bypass, this was expressed in terms of enhancing local businesses. These participants suggested that there would be less traffic, less noise, and less congestion,

which would allow locals and tourists to have better access to shops, therefore improving business by giving Tugun a 'village-like atmosphere'.

Overall, this survey revealed that there is concern in the community regarding a possible loss of trade and disruption to the normal flow of trade for local businesses. Those most concerned are restaurant, hotel, service station and fast food outlet owners.

Businesses in larger commercial centres such as Coolangatta and Tweed Heads are unlikely to experience any significant change in trade as a result of the proposed bypass. While access improvements are likely to be beneficial to trade in these centres, the extent is difficult to assess. It is however not envisaged to be significant.

## **7.2 Mitigation Measures**

### **7.2.1 Changes to the Local Area**

Some positive impacts on the local economy would be expected from the operation of the proposed Tugun Bypass. Improved amenity associated with a decrease in traffic using the Gold Coast Highway and Golden Four Drive is likely to attract the local community to shop more frequently in these areas. Additionally, traffic travelling to the coastal strip would continue to use the Gold Coast Highway. The removal of heavy vehicles from this highway would make for a more relaxed trip. In turn, this could encourage drivers to stop at shops of interest along the Gold Coast Highway which they may not otherwise patronise if it was more congested and the ability to stop was difficult. This has the potential to result in an increase in tourist trade in the form of planned trips, creating a demand for accommodation and associated services.

### **7.2.2 Local Employment**

Any short-term access problems at employment areas in the vicinity of Stewart Road, Boyd Street or Parks Drive or for workers using these roads would be alleviated by the introduction of traffic management procedures. Traffic management plans would be developed to ensure the safe and efficient passage of vehicle movements around the construction site and adjacent to the access points. These would be prepared before construction activities commence.

### **7.2.3 Local Businesses**

Any short-term access problems at the service stations in Stewart Road and Kennedy Drive, would be alleviated by the introduction of traffic management procedures. Traffic management plans would be developed to ensure the safe and efficient passage of vehicle movements to these facilities. These would be prepared before construction activities commence.

A loss of passing trade has been identified as a possible impact on local businesses located on the Gold Coast Highway and Golden Four Drive. Strategies such as focussing more on local trade, increasing advertising, diversifying product lines and relocating could be adopted to mitigate the effects of decreased highway traffic. These are measures that would need to be undertaken by individual business operators.



## 8. Conclusions

Land use and transport planning objectives and priorities for the southern Gold Coast and northern NSW regions would be supported by the proposed transport corridor.

Benefits for the region would result from the operation of the proposed Tugun Bypass. The major benefits would be:

- reduction in daily through traffic and an increase in local traffic along the Gold Coast Highway between Currumbin and Tweed Heads;
- improvement in travel times for traffic and reduced traffic flows on the Gold Coast Highway;
- improved accessibility and response times of emergency services;
- improved reliability and efficiency of road freight movements in the southern Gold Coast region;
- increased attractiveness of visiting coastal beaches in the study area with the diversion of heavy freight vehicles; and
- improvements in the general amenity of areas surrounding the Gold Coast Highway.

These benefits would contribute to enhancing the regional social and economic environment, supporting existing and future land uses and encouraging Council's vision for growth in the region.

There are well established land use patterns and committed future land uses in the study area. Potential impacts of the proposed transport corridor on these patterns of land use and the opportunities the proposal presents were considered during the concept development and option assessment phases of the study. The preferred alignment has been chosen to alleviate adverse impacts and to take advantage of positive impacts.

However, land use and property impacts would arise from:

- the acquisition of land;
- changes to existing land uses on directly affected sites;
- effects on future land uses; and
- changes to property access.

Access changes to properties would be most apparent during construction. All existing access routes would be reinstated at the completion of construction activities.

Direct effects of the proposed bypass on existing land uses would be experienced at the Tugun Landfill, Gold Coast Airport, Tweed Heads Pony and Hack Club, Tweed Sandblasting, Metro Advertising and Boyd's Bay Garden World Nursery. Operations at these facilities would be maintained with the implementation of a number of appropriate mitigation measures.

Effects on future land uses would be minimal. A portion of land would be acquired from the site of the Pacific Beach Estate. However, the location of the proposed Tugun rail station provides the opportunity for higher intensity uses with its integration with Pacific Beach Estate as part of a transit orientated development.

Social impacts during construction activities and operation of the proposed Tugun Bypass would be associated with:

- changes to access patterns;
- changes in amenity for individual community members;
- issues relating to road safety; and
- perceptions of change.

The main mitigation measures to alleviate the effects of these impacts are summarised below:

- preparation of a traffic management plan for the construction site and its surroundings that aims to reduce access difficulties to facilities and maintain adequate levels of road safety;
- assessment of the feasibility of constructing an internal link from Stewart Road to Boyd Street for use by construction vehicles to reduce access difficulties to facilities, minimise noise impacts from construction vehicles and construction activities and maintain adequate levels of road safety;
- undertake landscaping and rehabilitation activities along the length of the proposed Tugun Bypass upon completion of construction activities;
- use of excavation technologies such as different piling techniques, to minimise noise and vibration levels;
- use of appropriate road surface treatments to lessen road traffic noise;
- installation of noise barriers and earth berms at selected locations;
- employment of appropriate construction techniques that minimise the emission of exhaust fumes and the release of airborne dust; and
- implementation of an effective community consultation strategy.

Impacts on the economic environment would be minimal although some loss of passing trade for businesses located on the Gold Coast Highway and Golden Four Drive between Currumbin and Tweed Heads could be expected. The improvement of traffic conditions in the area would provide the opportunity for amenity improvements which could assist in the development of local businesses.

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## **Legislation**

### **Commonwealth**

*Airports Act 1996.*

*Airports (Protection of Airspace) Regulations 1996.*

*Australian Heritage Commission Act 1975.*

### **Queensland**

*Integrated Planning Act 1997.*

*Acquisition of Land Act 1967.*

### **NSW**

*Environmental Planning and Assessment Act 1979.*

*Land Acquisition (Just Terms Compensation) Act 1991.*





## Appendix A

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### Business Perception Survey



# Tugun Bypass Environmental Impact Assessment

## Business Perceptions Survey



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### Tugun Bypass Alliance

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## Executive Summary

*A business perceptions survey was undertaken to obtain the views of Tugun business owners/managers, located in the vicinity of the proposed Tugun Bypass, with regard to potential impacts as a result of the proposed development.*

*The survey consisted of a short telephone questionnaire which was conducted with 28 owners or managers of local businesses. These businesses were located along Golden Four Drive, Gold Coast Highway and Coolangatta Road.*

*The results of the survey indicated that the majority of local business owners/managers are not concerned about the proposed bypass. Most business owners/managers indicated that the proposed bypass would either have no effect or would be good for business due to less congestion and noise, better access for residents and customers, and the likely development of a 'village-like atmosphere' in Tugun.*



# 1. Introduction

## 1.1 Background

As part of the consultation process for the Tugun Bypass Environmental Impact Statement (EIS), a survey was undertaken to obtain the views of Tugun business owners/managers located in the vicinity of the proposed Tugun Bypass with regard to potential impacts as a result of the proposed development.

A sample of businesses most likely to be affected by the proposed bypass was surveyed. These businesses were located along Golden Four Drive, Gold Coast Highway and Coolangatta Road (refer to Figure 1.1). Businesses identified as the most likely to be affected by the proposed bypass included:

- service stations;
- fast food outlets;
- holiday apartments and hotels;
- news agencies;
- convenience stores;
- restaurants and cafes; and
- second-hand stores.

The survey consisted of a short telephone questionnaire to obtain information from local business owners/managers on the affects of the bypass on trade, property values and the local community. A copy of the survey can be found as Attachment One.

Twenty-eight owners/managers of local businesses were interviewed between Wednesday 7 February and Friday 16 February 2001. Whilst the survey design also provided opportunities for one-on-one meetings with business owners/managers that required further information or displayed anxiety about the proposed bypass, no individual meetings were requested.

**Figure 1.1 Map of Survey Area**

## 2. Consultation Findings

The following sections outline the results of the business perceptions survey. A table representing the raw data is provided as Attachment Two.

### 2.1 Awareness of the Bypass

All participants surveyed indicated that they were aware of the proposed Tugun Bypass. The majority of participants had heard of the bypass via the local newspaper. Television, information sheets, word of mouth, radio and the recently erected Main Roads project sign were also cited as information sources.

Survey participants commented about the length of time the proposed bypass had been discussed, and indicated frustration with the perceived delays in its implementation. Two participants, and a few people who refused to participate, said that they were sick of hearing about the Tugun Bypass and wanted it built. Another business owner, who refused to participate, stated that he was 'already involved in the development of the bypass and would be out of business due to the goods and services tax (GST) in any event'.

### 2.2 Sources of Trade

Survey participants indicated that sources of trade were evenly divided between local residents, passing traffic and tourists specifically travelling to Tugun for a holiday. It was clear that the type of business determined their source of trade. In general:

- holiday apartments and hotels relied on passing traffic and tourists;
- service stations and fast food outlets relied on local residents, passing traffic and tourists;
- restaurants relied primarily on tourists and local residents with a small percentage of passing traffic; and
- convenience stores, second-hand stores and news agencies relied on local residents.

### 2.3 Perceptions of the Effects of the Bypass

#### 2.3.1 Business

More than half of the survey participants (15) indicated that the proposed bypass would have some effect on their business. Of the remainder, all but one, responded that there would be no effect. One participant indicated that they did not know what effect the bypass would have on their business. Two of the participants who indicated that there would be no effect stated that their businesses were situated where they could still be accessed from the Gold Coast Highway traffic.

Of the participants who indicated that their business would be affected, only five were concerned about a loss in trade due to less passing traffic. These businesses were primarily holiday apartments and restaurants.

One business owner indicated that they were against the road and suggested that a rail line was the better solution for traffic congestion.

The remaining participants who indicated that their business would be effected suggested that the bypass would enhance their business. These participants suggested that the bypass would mean less traffic, less noise, and less congestion, which would allow locals and tourists to have better access to shops therefore improving business by giving Tugun a 'village-like atmosphere'.

A few businesses indicated that they may experience a small drop in trade due to less passing traffic, but still supported the bypass and suggested that it was necessary for local residents.

### **2.3.2 Other Businesses**

Almost all participants indicated that the proposed bypass would affect other businesses. Only two businesses indicated that they thought the bypass would have no affect on other businesses and one business indicated that they did not know.

Approximately half of the participants who indicated other businesses would be affected suggested that this would occur because of less passing traffic. Concerns were raised about the viability of service stations and fast food outlets in particular. One participant indicated that her business and other businesses would be 'affected during construction of the road' as there would be more traffic which would interfere with business.

The remaining half of participants suggested that other businesses would benefit from the bypass due to less traffic, less congestion and better access.

### **2.3.3 Property Values**

When asked about property values, more than half of the participants indicated that the bypass would have some effect. Seven businesses indicated that they did not know if there would be any affect and three businesses thought there would be no affect on property values.

Most participants who indicated that there would be an affect suggested that property values would increase due reduced passing traffic and the associated noise and congestion. Only three participants suggested that property values would decrease, and each response referred to properties located directly adjacent to the proposed route. Four participants indicated that private property values would increase, while business values would decrease.

One participant indicated that the airport was a bigger problem for local businesses than the traffic.

### **2.3.4 Local Community**

In response to the question of impacts on the local community, a large majority of participants indicated that the local community would be affected. Only one participant responded that there would be no impact, and five indicated that they did not know.

The effects on the local community identified by participants were mostly positive, including:

- less traffic congestion;

- less noise and accidents which would result in a safer environment for residents; and
- improved access which would assist commuters in getting to work.

Two participants indicated that one positive effect of the bypass would be that it would stop people whingeing.

Responses suggesting that there would be a negative effect on the local community cited loss of business as the primary reason, with the flow on affect being a decline in the goods and services available due to business closure. Two participants suggested that the bypass could be both good and bad for the community.





### 3. Overview

The results of the survey indicate that the majority of local business owners/managers are not concerned about the proposed bypass. Most business owners/managers indicated that the bypass would either have no affect or would be good for business due to less congestion and noise, better access for residents and customers, and the likely development of a village-like atmosphere in Tugun.

The type of business and source of trade defined the responses regarding effects on trade. Participants who's businesses relied primarily on local trade indicated that the bypass would have no impact or would benefit their business. Participants who's businesses relied on tourism for trade primarily indicated that the bypass would either have no impact or would be good for trade. Participants commented that people generally travel to particular areas for holidays, and therefore reducing traffic would not result in a reduced number of customers, but it would result in reduced noise.

Participants who's businesses relied on passing trade were divided on the impacts of the bypass. Some indicated that there would be no impact on business or that the bypass would be good for business due to less trucks and congestion on the road. Others indicated that trade would reduce, as 'less traffic means less customers'.

The majority of business owners/managers indicated that they were not concerned about the bypass and its effects on trade. In contrast, almost all surveyed suggested that other businesses would be affected, some positively and some negatively. The businesses that were identified as being negatively affected were amongst those surveyed whose owners/managers indicated that they were not concerned about their own businesses.

Opinions on property values varied among participants, however most indicated that resident property values would increase, except for directly affected properties, such as those near Tugun Hill. A few business owners/managers suggested that while resident property values would go up, business property values would decrease.

Impacts on the local community were deemed mostly to be positive due to less traffic and reduced noise and fumes, 'improved quality of life' and easier access. Adverse impacts were confined to business loss.





## **Attachment One**

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### Telephone Questionnaire



## Attachment One – Telephone Questionnaire

### Consultation with Businesses (One-on-One Interviews)

#### Introduction

Hello, my name is \_\_\_\_\_ and I am calling from a company called PPK Environment & Infrastructure.

I am ringing to talk to you about the proposed Tugun Bypass, which may have affects on your business.

You may have heard about the proposed Tugun Bypass (if NO, go to BACKGROUND). The proposed bypass is a road and rail corridor running behind the Coolangatta Airport, linking the Pacific Highway (near Stewart Road) with the Tweed Heads Bypass.

The purpose of the bypass is to help reduce traffic congestion and travel times for local and interstate traffic, by diverting long distance travellers from the Gold Coast Highway to the new bypass. The bypass will provide the final missing link of the Pacific Motorway connecting Brisbane with southern destinations.

Would you have time now to discuss your thoughts on the possible impacts of the bypass on your business, or would you prefer I rang back at a more convenient time?

IF NOW: GO TO QUESTION 1

IF CALLING LATER: When would be a convenient time for me to call?

Time \_\_\_\_\_

Person to ask for \_\_\_\_\_

Name of business \_\_\_\_\_

#### Background

As I said, a bypass has been proposed for the Gold Coast/Tweed Heads region. The route runs from Stewart Road, Currumbin, west of Coolangatta Airport (in New South Wales) then in a tunnel adjacent to the airport's runway, avoiding the Cobaki Lakes wetlands. The route includes interchanges at Stewart Road, Boyd Street (Tugun), and at the Tweed Bypass (Tweed Heads). The road will be built as a four lane motorway with provision made for a future upgrading to six lanes in the median. The project also provides for a rail corridor for the future extension to the airport.

GO TO QUESTION 1

1. Before we called you today, were you aware of the proposed Tugun Bypass?

Yes                      No

If YES, go to question 3

If NO, go to question 2

2.      Would you like to be put on our mailing list?

If NO, go to question 3.

If YES, obtain details.

Name \_\_\_\_\_

Address \_\_\_\_\_

Phone Number \_\_\_\_\_

3.      How did you become aware of the proposed Tugun bypass?

Local Newspaper

Information Sheets

Neighbours/Friends

Television

Radio

Letter

Public Displays

Other

4.      Where does a lot of your business come from?

Local Residents

Passing Traffic

Local Business

Other \_\_\_\_\_

5.      Now, thinking about after the road is built, when it's actually operating, do you think this is likely to affect your business?

Yes

No

Don't know

If YES, go to question 6.

If NO, go to question 8.

6.      In what ways do you think the operation of the road is likely to affect your business?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



7. Do you think these impacts will also be felt by other businesses in the area?

Yes                      No                      Don't know

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8. Do you think the bypass will affect property values in the area?

Yes                      No                      Don't know

If YES, go to question 9.  
If NO, go to question 10.

9. In what ways will the bypass affect property values?

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10. Do you think the bypass will affect the local community?

Yes                      No

If YES, go to question 11.  
If NO, end questionnaire.

11. In what ways will the bypass effect the local community?

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Thank you very much for your time. If you have any questions about this survey phone 1800 067 929.







## Attachment Two

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### Table of Results



## Attachment Two - Results from Business Perceptions Survey

Question	Response	Number of Responses
1. Before we called you today, were you aware of the proposed Tugun Bypass?	Yes	25*
	No	-
2. How did you become aware of the Tugun Bypass? ▽	Local Newspaper	20
	Information Sheets	3
	Neighbours/Friends	3
	Television	8
	Radio	2
	Letter	-
	Public Displays	-
	Other	10
3. Where does a lot of your business come from? ▽	Local Residents	15
	Local Business	2
	Passing Traffic	17
	Other - Tourists	14
4. Now, thinking about after the road is built, when it's actually operating, do you think it is likely to affect your business?	Yes	15
	No	9
	Don't Know	1
5. In what ways do you think the operation of the road is likely to affect your business? ▽	Decrease in passing trade	5
	Less traffic congestion	7
	Better access	3
	Village atmosphere	1
	Less noise	3
	Too few walk-ins to affect business/good for locals	4
6. Do you think these impacts will also be felt by other businesses in the area?	Yes	22
	No	2
	Don't know	1
7. In what ways will the impacts be felt by other businesses? ▽	Less traffic, less trade	10
	General benefit	12
	Construction impacts	1
8. Do you think the bypass will affect property values in the area?	Yes	15
	No	3
	Don't know	7
9. In what ways will the bypass affect property values? ▽	Increase	11
	Decrease	3
	Airport bigger problem	1
	Increase for residents, decrease for businesses	4
10. Do you think the bypass will affect the local community?	Yes	19
	No	1

Question	Response	Number of Responses
	Don't Know	5
11. In what ways will the bypass affect the local community?▽	Loss of trade/business	1
	Could be good or bad	2
	Safer roads	1
	Stop people whingeing	2
	General benefit	4
	Help commuters	1
	Less noise	5
	Village atmosphere	3
	Less fumes	1
	Less traffic	3
	Improve access	2
	Good for local community, bad for business	1

\* Does not include three businesses who refused to participate but still made comments on the bypass. Comments made have been included in the report.

▽ Participants were able to give more than one answer.